PART B

SOLAR - GEOPHYSICAL DATA

ISSUED
SEPTEMBER 1959

U. S. DEPARTMENT OF COMMERCE
NATIONAL BUREAU OF STANDARDS
CENTRAL RADIO PROPAGATION LABORATORY
BOULDER, COLORADO

CRPL-F 181
PART B

NATIONAL BUREAU OF STANDARDS
CENTRAL RADIO PROPAGATION LABORATORY
BOULDER, COLORADO

Issued
30 Sept. 1959

SOLAR - GEOPHYSICAL DATA

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INTRODUCTION

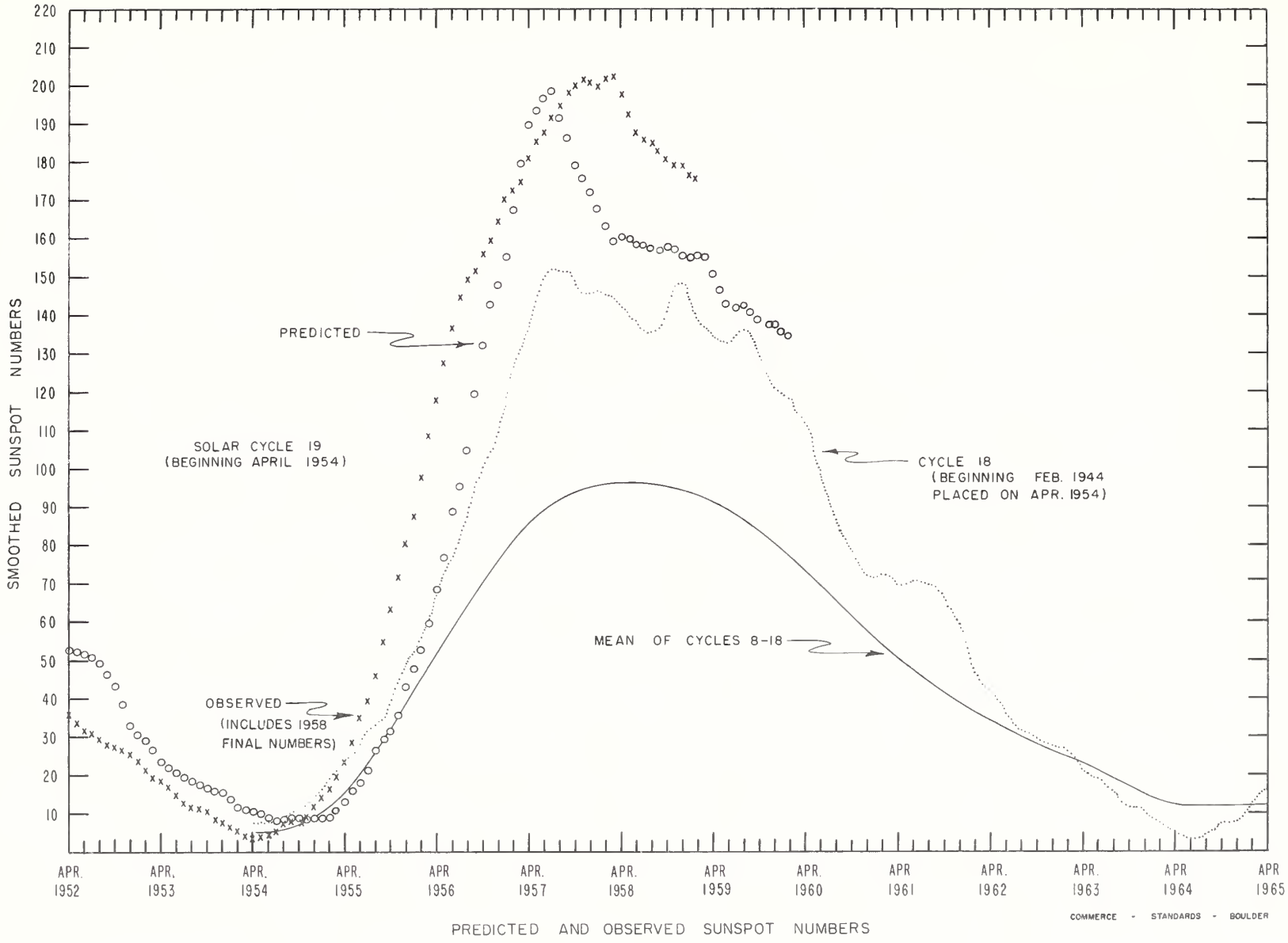
The descriptive text is published quarterly or whenever context of the report is changed. The last issue in which the text appeared was CRPL-F180 Part B issued August 1959.

DAILY SOLAR INDICES

July 1959	American Relative Sunspot Numbers $R_{A'}$
1	163
2	121
3	145
4	118
5	121
6	113
7	113
8	102
9	100
10	84
11	102
12	123
13	152
14	152
15	150
16	197
17	209
18	178
19	154
20	143
21	109
22	104
23	106
24	117
25	133
26	156
27	176
28	178
29	184
30	197
31	191
Mean:	141.6

Aug. 1959	Zürich Provisional Relative Sunspot Numbers R_Z	Daily Values Solar Flux at 2800 Mc, Ottawa, Canada Flux
1	177	214
2	210	228
3	213	240
4	225	236
5	212	229
6	207	227
7	179	212
8	175	204
9	170	204
10	155	202
11	180	200
12	160	196
13	125	194
14	139	189
15	129	190
16	151	201
17	158	224
18	174	229
19	182	215
20	180	224
21	200	230
22	200	243
23	205	262
24	217	245
25	212	253
26	220	257
27	231	279
28	274	302
29	301	308
30	292	312
31	284	305
Mean:	198.0	234.0

COMMERCE - STANDARDS - BOULDER



PREDICTED AND OBSERVED SUNSPOT NUMBERS

CALCIUM PLAGE AND SUNSPOT REGIONS

AUGUST 1959

CMP Aug. 1959	Lat	McMath Plage Number	Return of Region	Calcium Plage Data				Sunspot Data		
				CMP Values				CMP Values		
				Area	Int.	History	Age	Area	Count	History
01.9	N12	5299	*	1800	3.5	ℓ — ℓ	-	190	12	ℓ⌐\ d
03.4	N11	5300	5271	6700	3.5	ℓ — ℓ	2	860	15	ℓ \ ℓ
03.5	N27	5307	New	400	1.5	b Λ d	1			
03.8	S12	5301	New	600	3.5	ℓ / ℓ	1			
03.9	S22	5303	**	800	3	ℓ — ℓ	4	180	6	b Λ d
05.3	N17	5304	5252	300	1.5	ℓ — ℓ	5			
05.9	S31	5309	New	(400)	(1)	ℓ⌐\d	-			
06.5	N10	5310	***	400	2.5	ℓ / ℓ	5			
06.8	N25	5311	****	1200	2	ℓ \ ℓ	5,9	20	2	b Λ d
07.0	S20	5324	New	800	2	b⌜ ℓ	1	40	2	b⌜ ℓ
07.6	N00	5314	New	1400	3	ℓ / ℓ	1	600	24	b / ℓ
08.7	S16	5313	5264	700	2	ℓ — ℓ	6			
08.7	N33	5316	New	900	1	ℓ⌐\d	1			
08.8	S10	5317	New	1500	3.5	ℓ / ℓ	1	390	3	ℓ — ℓ
10.1	N17	5315	5265	11,000	3	ℓ — ℓ	5,3	620	12	ℓ — ℓ
12.0	N27	5319	5270	1000	1	ℓ⌐\d	5			
12.2	N13	5318	5272	900	2.5	ℓ / ℓ	6	150	10	b⌜ ℓ
12.6	S19	5320	5273	900	2.5	ℓ⌐\d	3			
13.2	N25	5321	5274	1200	1	ℓ⌐\d	10			
14.2	S06	5327	New	700	2.5	b / ℓ	1	70	1	b⌜ ℓ
14.3	N16	5322	5274	2700	1	ℓ⌐\d	10			
15.0	S16	5338	New	(1200)	(2.5)	b⌜ ℓ	1			
16.0	N14	5323	5280	6000	3	ℓ — ℓ	4	530	8	ℓ — ℓ
16.6	N33	5325	5277	700	1.5	ℓ⌐\d	4			
18.2	N22	5326	5283	400	1.5	ℓ⌐\d	3			
18.7	N08	5328	5284	800	2	ℓ — ℓ	3			
19.1	N22	5333	New	200	1	b / ℓ	1			
19.2	N35	5332	New	300	1.5	b Λ d	1			
20.0	N09	5329	New	6500	3	ℓ — ℓ	1	880	33	ℓ / ℓ
20.6	S06	5330	5296	1800	2	ℓ — ℓ	2	20	2	ℓ — ℓ
21.4	S23	5337	New	400	2.5	b / ℓ	1	40	2	b / ℓ
21.8	N25	5334	5286	1600	2	ℓ — ℓ	3,4			
22.4	N10	5331	New	1000	2	ℓ — ℓ	1			
24.0	S13	5335	5289	800	2	ℓ — ℓ	4,3			
25.4	N18	5336	New	9000	3.5	ℓ — ℓ	1	1210	15	ℓ — ℓ
27.2	N20	5339	+	8000	3.5	ℓ — ℓ	2	820	17	ℓ / ℓ
28.7	S12	5340	New	4500	3.5	ℓ / ℓ	1	2020	27	ℓ / ℓ
29.0	N13	5341	++	7300	3	ℓ — ℓ	2,3	820	22	ℓ — ℓ
31.0	N17	5346	New	2000	2.5	b⌜ ℓ	1	340	6	ℓ — ℓ
31.2	S18	5342	+++	3000	2.5	ℓ — ℓ	2,5			
31.7	S05	5343		2500	3	ℓ / ℓ		390	8	ℓ — ℓ

* Merged with 5294 (July).
** 5250 and 5254.
*** Part of 5260.
**** Part of 5260 and 5256.
\+ 5298, 5293,5292.
++ 5294,5300.
+++ 5301,5303.

CORONAL LINE EMISSION INDICES

AUGUST 1959

CMP Aug 1959	North East Quadrant (observed 7 days earlier)				South East Quadrant (observed 7 days earlier)				South West Quadrant (observed 7 days later)				North West Quadrant (observed 7 days later)			
	G_6	G_1	R_6	R_1	G_6	G_1	R_6	R_1	G_6	G_1	R_6	R_1	G_6	G_1	R_6	R_1
1	x	x	x	x	x	x	x	x	x	x	35a	56a	x	x	48a	109a
2	207a	359a	x	x	165a	206a	x	x	83a	108a	x	x	70a	102a	x	x
3	255a	300a	x	x	184a	348a	x	x	103	185	28	51	116	196	23	38
4	146	246	x	x	87	108	x	x	70	80	18a	21a	100	144	x	x
5	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
6	139	164	33	78	93	124	24	39	140	196	x	x	179	309	x	x
7	133a	190a	35a	54a	77a	92a	32a	54a	148	303	x	x	x	x	x	x
8	97	116	x	x	95	122	x	x	x	x	x	x	x	x	x	x
9	187	216	46	102	144	200	28	78	98	151	16	24	167	207	28	60
10	100*	178	x	x	58	76	x	x	77	99	x	x	160	200	x	x
11	184	228	x	x	107	140	x	x	92	120	x	x	205	260	x	x
12	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
13	x	x	x	x	x	x	x	x	128a	167a	17a	25a	150a	167a	14a	20a
14	x	x	x	x	x	x	x	x	102	170	12	21	130	150	16	40
15	x	x	22a	30a	x	x	25a	36a	165	300	x	x	219	300	x	x
16	340a	403a	x	x	88	107	x	x	x	x	x	x	x	x	x	x
17	191	346	33	49	81	96	16	19	62	90	13	21	148	180	x	x
18	93	150	30a	40a	69	84	29a	36a	x	x	x	x	x	x	x	x
19	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
20	160	202	x	x	195	390	x	x	135	165	55	90	138	188	36	60
21	109	163	x	x	82	102	x	x	109	136	46	70	124	160	33	48
22	x	x	x	x	x	x	x	x	100	132	15	27	161	204	24	36
23	83	100	25	32	87	111	13	18	61	80	20	24	75	100	52	96
24	94	112	x	x	154	198	x	x	44	74	20	25	121	172	56	102
25	157	184	35	73	97	126	23	30	45	60	x	x	126	180	x	x
26	x	x	x	x	x	x	x	x	80	92	x	x	182	216	x	x
27	237	400	30	48	95	206	22	36	102	116	26	48	203	344	33	66
28	273*	383	38	91	125	250	20	50	112	143	x	x	145	260	41	54
29	208*	300	x	x	132	250	x	x	148	231	21	30	234	350	31	40
30	x	x	x	x	x	x	x	x	171	207	39	82	208	276	29	48
31	130	170	28	35	123	250	48	65	105	156	x	x	246	280	37	54

x - no observations. a - index computed from low weight data. * - yellow line observed.

SOLAR FLARES
AUGUST 1959

OBSERVATORY	DATE AUG 1959	OBSERVED UNIVERSAL TIME START	END	MAX. PHASE	LOCATION APPROX. LAT.	MER. DIST.	McMATH PLAGE REGION	DURATION — MINUTES	IMPORTANCE	OBS. COND.	MEASUREMENTS TIME — U T	MEAS. AREA Sq. Deg.	CORR. AREA Sq. Deg.	MAX. WIDTH Ha	MAX. INT. %	PROVISIONAL IONOSPHERIC EFFECT
LOCKHEED	01	0125	0142 D	0131	N14	E11	5299	17 D	1	1		4.00				G-SWF
MITAKA	01	0127 E	0210	0141	N10	E16	5299	43 D	1	1	0127	4.42	4.64	1.92	120	
HAWAII	01	0128 E	0148 D		S02	E09	5299	20 D	1&	1	0136	4.60	4.70			
SIMEIZ	01	0713	0750	0725	N13	E05	5299	37	1	2	0718		.90	2.40	140	
SIMEIZ	01	0717	0750	0724	N11	E01	5299	33	1	2	0724		.90		76	
SIMEIZ	01	0724	0750	0737	N17	W43	5291	26	1	2	0732		1.20	2.40	68	
LOCARNO	01	1040 E	1045 D		N07	W18	5294	5 D	1	3						
MCMATH	01	1313	1430 D	1345	N27	W38	5293	77 D	1&	2	1345		4.50			
CAPRI S	01	1320 E	1412 D		N29	W34	5293	52 D	1	3	1335	3.50	4.90			
SAC PEAK	01	1314	1442	1334	N27	W37	5293	88	2	2		6.00			20	Slow S-SWF
ZURICH	01	1322 E	1330 D		N25	W38	5293	8 D	2	1	1322		9.00			
LOCARNO	01	1324	1450	1340	N27	W36	5293	86	2&	2	1340		9.00			
LOCARNO	01	1504	1535		N11	E66	5310	31	1	2						S-SWF
LOCKHEED	01	1816	1840	1819	N15	W04	5294	24	1	3		2.20				
MCMATH	01	2030	2130	2040	S20	E28	5303	60	1	1	2040		2.50			
LOCKHEED	01	2033	2100	2037	S20	E27	5303	27	1	3		3.70				
CAPRI S	02	0558 E	0619 D		N04	E19	5300	21 D	1	3	0600	2.00	2.10			
SIMEIZ	02	0600 E	0640 D	0621 U	N04	E20	5300	40 D	1	1	0616		1.90	2.70	84	
MITAKA	02	0612 E	0622		N03	E19	5300	10 D	1	1	0621	2.57	2.78	1.71	107	
SIMEIZ	02	0613 E	0627 D		N10	W20	5294	14 D	1	1	0624		1.90	2.40	100	
WENDEL	02	0616 E	0633 D		N10	W19	5294	17 D	1				3.00			
WENDEL	02	0616 E	0633 D		N03	E20	5300	17 D	1				3.00			
SIMEIZ	02	0720 E	0727 D	0722 U	N03	E18	5300	7 D	1	1	0726		.90	1.90	84	
LOCARNO	03	0545	0552		S21	E12	5303	7	1	3						
SIMEIZ	03	0649 E	0708 D	0655 U	N03	E05	5300	19 D	1	1	0656		2.90	2.00	68	
SIMEIZ	03	0655 E	0708 D	0702 U	S22	E05	5303	13 D	1	1	0702		1.00		64	
LOCARNO	03	0721	0725 D		N04	E05	5300	4	1	3						
SIMEIZ	03	0721 E	0736 D	0725 U	N03	E05	5300	15 D	1	1	0725		1.80	2.20	84	
SIMEIZ	03	0730 E	0737 D	0732 U	N14	W22	5299	7 D	1	1	0732		1.00		80	
SIMEIZ	03	0732 E	0745 D	0737 U	N14	W27	5299	13 D	1	1	0739		2.00	2.20	120	
ZURICH	03	1349 E	1404		N16	W70	5291	15 D	1	1	1349		1.00			
ZURICH	03	1349 E	1358		S22	E08	5303	9 D	1	1	1349		2.00			
LOCARNO	03	1350	1400		S21	E08	5303	10	1	2						
LOCARNO	03	1515	1525		N07	W08	5300	10	1	2						
LOCARNO	03	1550	1605		N01	W07	5300	15	1	2						
LOCKHEED	03	2044	2108	2050	N02	W07	5300	24	1&	3		3.50				S-SWF
SIMEIZ	04	0604 E	0621 D	0605 U	N26	E76	5315	17 D	1	1	0617		3.00	2.80	76	
ZURICH	04	0700 E	0709		N16	W83	5291	9 D	1	1	0700		2.00			
ZURICH	04	0700 E	0718		S02	E47	5314	18 D	1	1	0700		2.00			
ZURICH	04	0715	0727		N04	W11	5300	12	1	1	0715		5.00			
SIMEIZ	04	0715 E	0731 D	0717 U	N05	W10	5300	16 D	1	1	0717		1.40		104	
WENDEL	04	0717 E	0727 D		N06	W08	5300	10 D	1				4.00			
SIMEIZ	04	0802 E	0804 D	0803 U	N00	W16	5300	2 D	1	1	0805		4.50	2.60		
ARCETRI	04	0837 E	0852 D		N16	W90	5291	15 D	1	3						
CAPRI S	04	1033 E	1103 D		N04	W11	5300	30 D	1	3	1036	2.00	2.00			Slow S-SWF
CLIMAX	04	1438	1505	1448	N15	W54	5294	27	1		1448	2.10				Slow S-SWF
CAPRI S	04	1448 E	1510 D		N16	W50	5294	22 D	1	2	1450	2.00	3.30			
LOCKHEED	05	0133	0215	0150	N10	W33	5300	42	1	1		3.70				
HAWAII	05	0140 E	0154 D		N14	W32	5300	14 D	1	1	0140	2.90	3.50			

SOLAR FLARES

AUGUST 1959

OBSERVATORY	DATE AUG 1959	OBSERVED UNIVERSAL TIME START	END	MAX. PHASE	LOCATION APPROX. LAT.	MER. DIST.	McMATH PLAGE REGION	DURATION — MINUTES	IMPORTANCE	OBS. COND.	MEASUREMENTS TIME — U T	MEAS. AREA Sq. Deg.	CORR. AREA Sq. Deg.	MAX. WIDTH He	MAX. INT. %	PROVISIONAL IONOSPHERIC EFFECT
SIMEIZ	05	0636 E	0638 D	0638 U	N02	E33	5314	2 D	1	1	0638		2.10		68	
SIMEIZ	05	0643 E	0646 D	0644 U	N12	E85	5315	3 D	1	1	0644		1.90	2.20	72	
SIMEIZ	05	0707 E	0714 D	0711 U	N16	E54	5315	7 D	1	1	0711		3.00		72	
ZURICH	05	0710	0715		N16	E48	5315	5	1	3	0710		2.00			
ZURICH	05	0701 E	0708		N36	W57	5292	7 D	1	3	0701		5.00			
ZURICH	05	0701 E	0725		N16	W63	5294	24 D	1	3	0701		5.00			
SIMEIZ	05	0705 E	0905 D	0708 U	N14	W65	5294	120 D	1&	1	0823		8.90	2.50	80	
CAPRI S	05	0821 E	0840 D		N16	W63	5294	19 D	1	3	0825	2.00	4.40			
ZURICH	05	0822 E	0907		N15	W63	5294	45 D	2	2	0822		10.00			
LOCARNO	05	0835 E	0915		N14	W64	5294	40 D	1&	2	0835		4.00			
LOCARNO	05	0930	1001		N03	W26	5300	31	1&	2	0935		2.00			
LOCARNO	05	1000	1018	1005	N36	W61	5292	18	1&	2	1005		3.00			
ZURICH	05	1006 E	1016		N36	W58	5292	10 D	1	2	1006		6.00			
ZURICH	05	1006 E	1017		N16	W64	5294	11 D	1	2	1006		1.00			
MCMATH	05	1537	1610 D	1557	N06	W30	5300	33 D	1	1	1557		2.00			
MCMATH	05	1935	1955 D		S18	E38	5313	20 D	1	1	1947		2.00			
LOCKHEED	06	0102	0120	0108	N14	E70	5315	18	1	1		2.40				Slow S-SWF
MITAKA	06	0553 E	0617		N16	E64	5315	24 D	1&	1	0553	2.06	5.97	3.06	134	
SIMEIZ	06	0651 E	0730 D	0652 U	N15	E67	5315	39 D	1&	1	0652		2.50	4.30	192	S-SWF
CAPRI S	06	0652	0724 D		N17	E62	5315	32 D	1	3	0655	1.00	2.20			
LOCARNO	06	0814	0825		N17	E37	5315	11	1	2	0820		1.00			
SIMEIZ	06	0836 E	0847 D	0840 U	N11	W80	5294	11 D	1&	1	0842		8.50	2.00	88	
MCMATH	06	1120 E	1230 D		S11	E36	5317	70 D	1	2	1135		2.00			
ZURICH	06	1324	1333		N16	E61	5315	9	1	2	1324		3.00			
LOCARNO	06	1340 E	1405		N20	E50	5315	25 D	1	2	1340		2.00			
LOCARNO	06	1353	1408	1358	N17	E35	5315	15	1	2	1358		1.00			
LOCARNO	06	1440 E	1540		N17	E59	5315	60 D	1	2	1450		3.00			
ZURICH	06	1520 E	1526		N15	E30	5315	6 D	1	2	1520		2.00			S-SWF
ZURICH	06	1520 E	1532		N16	E55	5315	12 D	1	2	1520		2.00			
LOCARNO	06	1522 E	1535		N01	E17	5314	13 D	1	2	1522		1.00			
ZURICH	06	1526	1531		S01	E16	5314	5	1	2	1526		2.00			
LOCARNO	06	1636	1710 D	1654	N09	W78	5294	34 D	1&	2	1654		3.00			S-SWF
LOCKHEED	06	1715	1747	1730	N03	W40	5300	32	1	2		2.40				
MCMATH	06	1715	1810	1735	N13	W40	5300	55	1	1	1735		3.00			
LOCKHEED	06	2309	2333	2319	N14	E59	5315	24	1	2		3.20				
MITAKA	07	0253 E	0302 D		N16	E26	5315	9 D	1	1	0255	1.54	1.79	1.69	110	
SIMEIZ	07	0618 E	0621 D	0619 U	S08	E27	5317	3 D	1	1	0619		4.00		60	
WENDEL	07	0719 E	0749		S07	E23	5317	30 D	1				3.00			
WENDEL	07	0724	0748		N23	E39	5315	24	1&				5.00			
SIMEIZ	07	0727 E	0745 D	0732	N21	E40	5315	18 D	1	1	0737		1.80	2.50	68	
WENDEL	07	0744	0816 D		N15	E50	5315	32 D	1				3.00			
WENDEL	07	0847 E	0919 D		N18	E31	5315	32 D	1				3.00			
SIMEIZ	07	0854 E	0910 D	0854 U	N18	E30	5315	16 D	1	1	0852		1.80	2.80	76	
LOCARNO	07	0900 E	0910		N18	E28	5315	10 D	1	2						
LOCARNO	07	0950 E	1055		N16	E47	5315	65 D	1&	2	1000		3.00			
WENDEL	07	1002 E	1115 D		N15	E48	5315	73 D	1&				6.00			
STOCKHOLM	07	1014 E	1042		N10	E48	5315	28 D	1	3	1019	1.70	2.70			
R O HERST	07	1035 E	1050	1035 U	N15	E49	5315	15 D	1	1	1034	2.10	3.10	1.80	61	
WENDEL	07	1151 E	1202 D		N12	E40	5315	11 D	1				3.00			
WENDEL	07	1258 E	1322 D		N14	E47	5315	24 D	1				3.00			
WENDEL	07	1326	1356 D		N15	E47	5315	30 D	2				8.00			

SOLAR FLARES

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OBSERVATORY	DATE AUG 1959	OBSERVED UNIVERSAL TIME START	OBSERVED UNIVERSAL TIME END	OBSERVED UNIVERSAL TIME MAX. PHASE	LOCATION APPROX. LAT.	LOCATION APPROX. MER. DIST.	LOCATION McMATH PLAGE REGION	DURATION — MINUTES	IMPORTANCE	OBS. COND.	MEASUREMENTS TIME — U T	MEASUREMENTS MEAS. AREA Sq. Deg.	MEASUREMENTS CORR. AREA Sq. Deg.	MEASUREMENTS MAX. WIDTH Hα	MEASUREMENTS MAX. INT. %	PROVISIONAL IONOSPHERIC EFFECT
SAC PEAK	07	1330	1402	1340	N15	E47	5315	32	1	3		2.18			16	
CAPRI S	07	1334 E	1350 D		N14	E47	5315	16 D	1	3	1346	3.00	4.50			
ZURICH	07	1507	1517		N14	E47	5315	10	1	3	1507		2.00			
LOCARNO	07	1530 E	1550		N17	E19	5315	20 D	1	2	1530		1.00			
LOCARNO	07	1534	1544	1537	S07	E17	5317	10	1	2	1537		1.00			
WENDEL	07	1535	1544 D		S07	E17	5317	9 D	1				3.00			
LOCKHEED	07	1551	1635	1604	N15	E46	5315	44	1	2		3.60				
SAC PEAK	07	1554	1634	1606	N15	E46	5315	40	1&	2		3.60			22	S-SWF
WENDEL	07	1558	1634 D		N17	E46	5315	26 D	2				10.00			
LOCARNO	07	1600	1636	1615	N16	E44	5315	36	2	2	1615		7.00			
WENDEL	07	1734 E	1750 D		N16	E17	5315	16 D	1				3.00			S-SWF
WENDEL	08	0534 E	0556 D		N18	E33	5315	22 D	1				3.00			
SIMEIZ	08	0619 E	0630 D	0620 U	S12	W60	5301	11 D	1	1	0625		3.00	3.00	64	
WENDEL	08	0653 E	0709 D		N18	E10	5315	16 D	1				3.00			
SIMEIZ	08	0734 E	0737 D	0734	N17	E28	5315	3 D	1	1	0734		1.60	2.00	76	
SIMEIZ	08	0736 E	0810 D	0740	S07	E10	5317	14 D	1	1	0739		2.00	2.20	80	
WENDEL	08	0737 E	0759 D		S08	E10	5317	22 D	1				3.00			
WENDEL	08	0839 E	0851 D		N14	E37	5315	12 D	1				3.00			
ZURICH	08	0840 E	0851		N14	E36	5315	11 D	1	1	0843		4.00			
SIMEIZ	08	0841	0850 D	0844 U	N13	E37	5315	9 D	1	1	0842		2.30	2.00	64	
ARCETRI	08	0900 E	0916 D		N02	W09	5314	16 D	1	3						
ZURICH	08	0936	0950		N17	E08	5315	14	1	1	0938		5.00			
STOCKHOLM	08	0937	0958 D		N24	E21	5315	21 D	1	2	0938	2.00	2.40			
WENDEL	08	0940 E	0953 D		N14	E36	5315	13 D	1				4.00			
WENDEL	08	0941 E	0951 D		N18	E11	5315	10 D	1				3.00			
ZURICH	08	0941	0953		N14	E36	5315	12	1	1	0946		5.00			
LOCARNO	08	1040 E	1050 D		N18	E16	5315	10 D	1	2						
DUNSINK	08	1048 E	1100		N13	E38	5315	12 D	1	1	1048	2.50	3.20	2.15		
WENDEL	08	1050	1103 D		N16	E35	5315	13 D	1				4.00			
CAPRI S	08	1051 E	1101 D		N15	E35	5315	10 D	1	3	1052	2.00	2.50			
LOCARNO	08	1320	1345		N13	E34	5315	25	1	2	1330		1.00			
SAC PEAK	08	1444	1520	1452	N14	E34	5315	36	1	1		2.05			18	
HAWAII	08	1854	1904	1856	N02	W16	5314	10	1	3	1856	2.50	2.60			
LOCKHEED	08	1934	2030	1942	N12	E30	5315	56	1	2		3.20				
MCMATH	08	1934	2110	1946	N12	E30	5315	96	1	2	1946		2.00			
HAWAII	08	1936	2024 D		N13	E30	5315	48 D	1&	2	1948	3.80	4.40			
ZURICH	09	0756 E	0811		N12	W38	5310	15 D	1	1	0756		1.00			
SIMEIZ	09	0817 E	0827 D	0819 U	N10	W38	5310	10 D	1	1	0819		2.30		64	
WENDEL	09	0940 E	0958 D		N12	W40	5310	18 D	1				3.00			
WENDEL	09	1214	1233		N21	E06	5315	19	1&				5.00			
SAC PEAK	09	1420	1502	1424	N21	E06	5315	42	1	2		3.03			17	
CLIMAX	09	1422	1439	1426	N22	E07	5315	17	1		1426	2.90				
SIMEIZ	10	0824 E	0827 D	0824 U	N11	E80	5323	3 D	1&	1	0827		6.00	2.16	48	
MCMATH	10	1555	1635 D	1608	N26	W08	5315	40 D	1&	3	1608		4.00			
SAC PEAK	10	1556	1642	1606	N27	W08	5315	46	1&	2		5.10			16	
CAPRI S	10	1559	1610 D		N28	W05	5315	11 D	1	3	1605	2.20	2.20			
LOCKHEED	10	2200	2333	2220	N11	E03	5315	93	2	3		7.90				
MCMATH	10	2231 E	2302 D		N13	E02	5315	31 D	2	3	2233		5.50			
HAWAII	10	2232 E	2232 D		N13	E00	5315		2	1	2232	8.30	8.30			
SIMEIZ	11	0646 E	0654 D	0648 U	N11	E65	5323	8 D	1	1	0649		1.90	2.30	64	

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SIMEIZ	11	0653 E	0658 D	0655 U	N22	E58	5323	5 D	1	1	0654		2.30	1.90	64	
ZURICH	11	0657 E	0707		N21	E57	5323	1D D	1	2	D657		2.00			
ZURICH	11	0702	0711		N17	ED1	5318	9	1	2	D7D2		1.00			
SIMEIZ	11	0715 E	0717 D	0715 U	S09	W30	5317	2 D	1	1	D715		2.10		64	
SIMEIZ	11	0729 E	0737 D	0731 U	N10	E69	5323	12 D	1	1	D737		2.3D	1.80	76	
WENDEL	11	0850 E	0906 D		N12	W51	5310	16 D	1				3.00			
LOCARNO	11	0901	0912	0903	N10	E61	5323	11	1	2	0903		2.00			
ZURICH	11	0905 E	0917		SD8	W33	5317	12 D	1	2	09D5		2.00			
ZURICH	11	0916	0924		N23	W16	5315	8	1	2	0916		1.00			
LOCARNO	11	1040	1049	1043	N10	E61	5323	9	1	2	1043		3.00			
WENDEL	11	1044 E			N11	E61	5323		1				4.00			
CAPRI S	11	1205	1228		N18	W24	5315	23	1&	2	1210	3.00	3.5D			
ZURICH	11	1221 E	1232		N21	W24	5315	11 D	1	2	1221		2.00			
ZURICH	11	1231	1238		N12	W21	5315	7	1	2	1231		1.00			
ZURICH	11	1416 E	1421		N01	W61	5314	5 D	1	2	1416		1.00			
ZURICH	11	1416 E	1423		S07	W36	5317	7 D	1	2	1416		1.00			
WENDEL	11	1559 E	1623 D		N28	W06	5315	24 D	1				3.00			
WENDEL	11	1559 E	1625 D		N26	W09	5315	26 D	1				4.00			
SIMEIZ	12	0732 E	0820 D	0741 U	S10	W45	5317	48 D	1&	1	D741		5.30	1.90	72	
SIMEIZ	12	0841 E	0858 D	0843 U	S11	W45	5317	17 D	1	1	D843		2.7D		72	
LOCARNO	12	0845 E	0900		N18	W37	5315	15 D	1	3	D845		1.00			
CAPRI S	12	1110 E	1145 D		S06	W44	5317	35 D	1	1	1128	2.50	3.50			
MCMATH	12	1121 E	1129 D		S06	W46	5317	8 D	1&	2	1127		4.00			
MCMATH	12	1218 E	1238	1221	S06	W45	5317	2D D	1	2	1221		2.00			
ZURICH	12	1223 E	1239		S07	W45	5317	16 D	1	2	1223		4.00			
ZURICH	12	1223 E	1230		N12	E53	5323	7 D	1	2	1223		3.00			
HUANCAYO	12	1435 E	1603 D	1436	S08	E19	5327	88 D	1&	2	1436	5.50	6.10	3.60		
HUANCAYO	12	1448	1502	1455	N18	W40	5315	14	1	2	1455	1.80	2.40	2.60		
HUANCAYO	12	1943	1959	1951	N11	W80	531D	16	2	2	1951	1.60	7.1D	5.50		
HAWAII	13	0012	0104	0018	S10	W51	5317	52	1&	3	0018	4.10	6.90			
HAWAII	13	0056	0110 D	0058	S08	E14	5327	14 D	1	2	0058	2.90	3.10			
SIMEIZ	13	0705 E	0720 D	0708 U	N23	E32	5323	15 D	1	2	0710		1.70	2.50	64	
ZURICH	13	0903	0907		N06	E84	5328	4	1	3	D9D3		2.00			
LOCARNO	13	1420	1435		N02	W86	5314	15	1	2						
HAWAII	14	0044	0234 D	0119	N12	E28	5323	110 D	2&	3	0119	12.00	13.40			G-SWF
MITAKA	14	0211 E	0326	0236	N10	E27	5323	75 D	2	2	0211	7.20	8.28	2.49	169	
SIMEIZ	14	0556 E	0606 D	0558 U	N05	E60	5328	10 D	1	2	0558		2.60		64	
SIMEIZ	14	0616 E	0631 D	0618 U	N15	E23	5323	15 D	1	2	0628		1.50	1.80	60	
ZURICH	14	0621 E	0637		N14	E23	5323	16 D	1	2	D621		2.00			
ZURICH	14	0621 E	0639		N19	E53	5326	18 D	1	2	0621		2.00			
ZURICH	14	0624 E	0632		N19	W63	5315	8 D	1	2	0624		1.00			
MCMATH	14	1420	1450		N05	W90	5314	30	1	1						
HAWAII	14	1804	1830 D	1810	S11	W74	5317	26 D	1&	3	1810	1.10	3.6D			
HAWAII	14	1848	1902	1854	N14	E15	5323	14	1	3	1854	3.40	3.6D			
SIMEIZ	15	0803	0832 D	0805	N12	E06	5323	29 D	1	2	08D5		2.30	3.00	88	
LOCARNO	15	1440	1514		N12	E05	5323	34	2-	2	1500		6.D0			
MCMATH	15	1445	1520	150D	N13	E06	5323	35	1	3	15D0		2.50			
LOCKHEED	15	1931	1955	1933	N13	W01	5323	24	1	3		2.40				
ZURICH	16	0928 E	0936 D		N14	WD4	5323	8 D	1	1	D928		5.00			

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MITAKA	17	0328	0346	0335	N14	W15	5323	18	1&	1	0342	2.06	2.14	1.81	176	S-SWF
NIZAMIAH	17	0331 E	0337 D		N15	W16	5323	6 D	1&	1	0331	2.43	2.55	1.60		
SIMEIZ	17	0636 E	0645 D	0637	N08	E67	5331	9 D	1	2	0641		2.20	2.60	76	
LOCARNO	17	0708	0739	0717	N13	W18	5323	31	2-	3	0717		4.00			
SIMEIZ	17	0710 E	0740 D	0715 U	N17	W18	5323	30 D	2	2	0714		3.00	7.00	80	S-SWF
CAPRI S	17	0716	0736		N17	W14	5323	20	1	3	0719	2.00	2.10			
CAPRI S	17	1220 E	1238 D		N16	W17	5323	18 D	1	3	1222	2.50	2.70			
LOCARNO	17	1225 E	1248		N13	W21	5323	23 D	2-	3	1225		4.00			S-SWF
ZURICH	17	1234 E	1242		N15	W21	5323	8 D	1	2	1234		2.00			
ZURICH	17	1237	1242		N05	E36	5329	5	1	2	1237		1.00			
ZURICH	17	1305	1315		N14	W21	5323	10	1	2	1305		1.00			
MEUDON	17	1408	1438	1413	S07	W45	5327	30	1				4.00			
LOCARNO	17	1410	1430	1416	S08	W47	5327	20	1&	3	1416		2.00			
CAPRI S	17	1411 E	1424		S07	W44	5327	13 D	1	3	1413	1.50	2.20			
SAC PEAK	17	1436	1504	1440	N15	W24	5323	30	1	2		3.27			20	Slow S-SWF
CLIMAX	17	1438	1500	1440	N16	W24	5323	22	1		1440	3.00				
LOCARNO	17	1515	1532	1521	N07	E39	5329	17	1	3	1521		1.00			
LOCKHEED	17	2046	2113	2048	N14	W28	5323	27	1&	2		4.00				S-SWF
HAWAII	17	2048	2106		N14	W26	5323	18	2	2	2048	9.20	10.00			
CLIMAX	17	2050 E	2059 D		N14	W27	5323	9 D	2		2050	7.10				
MITAKA	18	0024 E	0044		N17	W22	5323	20 D	1	1	0029	3.08	3.33	2.16	125	
MITAKA	18	0113	0123 D	0122	N14	W28	5323	10 D	1	1	0113			1.37	107	
SIMEIZ	18	0630 E	0634 D		N15	W34	5323	4 D	1&	1	0630		6.00			
SIMEIZ	18	0630	0644	0631	N07	E30	5329	14	1	1	0631		1.50	3.50	68	
AROSA	18	0631	0645		N08	E30	5329	14	1							
WENDEL	18	0631 E	0645 D		N08	E30	5329	14 D	1				4.00			
CAPRI S	18	0634	0643 D		N05	E28	5329	9 D	1	3	0638	1.80	2.10			
LOCARNO	18	0800 E	0830		N14	E85	5336	30 D	1	2						
WENDEL	18	0802 E	0820 D		N16	E48	5331	18 D	1&				5.00			
SIMEIZ	18	0808	0817	0809	N07	E30	5329	9	1	1	0811		1.50	3.60	104	
WENDEL	18	0809 E	0816 D		N08	E29	5329	7 D	1				4.00			
WENDEL	18	1019 E	1049 D		N12	W31	5323	30 D	2&				14.00			
STOCKHOLM	18	1020	1143		N13	W32	5323	83	2	3	1029	4.00	4.40			
LOCARNO	18	1020	1250	1050	N11	W34	5323	150	3	2	1050		24.00			S-SWF
MEUDON	18	1022	1216	1058	N11	W38	5323	114	3				30.00			
R O HERST	18	1203 E	1235	1203 U	N12	W30	5323	32 D	2	2	1203	5.20	6.20			
LOCARNO	18	1124	1136		N04	E14	5329	12	1	2	1130		1.00			
MEUDON	18	1126	1150	1128	N05	E17	5329	24	1				3.00			
AROSA	18	1300	1310		N08	E26	5329	10	1							
LOCARNO	18	1310	1440		N08	W34	5323	90	1&	2	1400		3.00			
WENDEL	18	1328 E	1411 D		N12	W33	5323	43 D	1				3.00			
LOCARNO	18	1404	1417	1408	N04	E13	5329	13	1	2	1408		1.00			
LOCARNO	18	1410	1422		N28	E45	5334	12	1	2	1415		1.00			
SAC PEAK	18	1452	1522	1502	N06	E17	5329	30	1	2		2.92			15	
DUNSINK	18	1527	1537		N13	W38	5323	10	1&	2	1531	1.90	2.40	3.30		
ZURICH	18	1528	1531 D		N16	W38	5323	3 D	1	1	1528		2.00			
AROSA	18	1528	1535 D		N16	W38	5323	7 D	1							
SAC PEAK	18	1618	1646	1625	N14	W40	5323	28	1	2		3.93			18	Slow S-SWF
WENDEL	18	1622	1632 D		N14	W39	5323	10 D	1				4.00			
SAC PEAK	18	1654	1822	1726	N05	E15	5329	88	2&	2		11.58			35	
CLIMAX	18	1656	1814	1733	N08	E17	5329	78	2		1733	11.10				Slow S-SWF
WENDEL	18	1657	1813 D		N04	E16	5329	76 D	2&				17.00			

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SAC PEAK	18	1658	1728	1703	N12	W42	5323	30	1	2		3.93			16	
ZURICH	18	1714 E	1726 D		N05	E16	5329	12 D	2&	2	1714		11.00			
HAWAII	18	2224	2250	2226	N15	W40	5323	26	1	3	2226	2.60	3.40			
CLIMAX	18	2231	2246	2236	N16	W42	5323	15	1		2236	2.20				
SIMEIZ	19	0647 E	0648 D	0647 U	N21	E90	5336	1 D	1	1	0648		4.20	3.00	48	
SIMEIZ	19	0820	0830	0822 U	N15	E90	5336	10	1&	1	0826			7.00		
ZURICH	19	0850	0854		N11	E72	5336	4	1	2	0850		3.00			
CAPRI S	19	0850 E	0855 D		N12	E78	5336	5 D	1	3	0852	.80	3.20			
ZURICH	19	1345	1400		N15	E71	5336	15	1	3	1345		5.00			
WENDEL	20	0554 E	0634 D		N04	W08	5329	40 D	2				11.00			
SIMEIZ	20	0601 E	0715 D		N05	W05	5329	74 D	1&	1	0601		5.00	2.60		
WENDEL	20	0920	0943 D		N14	E85	5339	23 D	1&				5.00			
LOCARNO	20	0920	0950		N14	E84	5339	30	2	2						S-SWF
ARCETRI	20	0924 E	0950 D		N12	E83	5339	26 D	1&	3	0927	1.10	9.00			
WENDEL	20	1252 E	1316 D		N15	E82	5339	24 D	1				4.00			G-SWF
ZURICH	20	1258	1304		N20	E79	5336	6	1	3	1258		2.00			
HUANCAYO	20	1928	1959	1932	N03	W11	5329	31	1	2	1932	4.70	4.80	2.90		
LOCKHEED	20	1928	2003	1934	N04	W10	5329	35	1	3		2.90				
MITAKA	21	0212 E	0220 D		N23	W77	5323	8 D	1&	1	0214	2.57	9.00	1.63	96	
SIMEIZ	21	0629	0644	0641 U	N06	W10	5329	15	1	1	0629		1.40	2.60	68	
WENDEL	21	0637	0648 D		N08	W13	5329	11 D	1				3.00			
CAPRI S	21	0640	0700		N03	W24	5329	20	1&	3	0644	3.20	3.50			
SIMEIZ	21	0639	0703	0641 U	N03	W23	5329	24	1	1	0640		2.90	3.90	80	
WENDEL	21	0640	0707 D		N03	W23	5329	27 D	1&				7.00			
SIMEIZ	21	0854 E	0857 D		N06	W16	5329	3 D	1	1	0857		2.30	2.70		
WENDEL	21	0856 E	0926 D		N08	W16	5329	30 D	1&				5.00			
CAPRI S	21	0858	0921		N06	W17	5329	23	1	3	0910	4.00	4.20			
WENDEL	21	1114 E	1127		N07	W12	5329	13 D	1				3.00			
WENDEL	21	1120 E	1132 D		N22	E72	5339	12 D	1				4.00			
WENDEL	21	1130 E	1142 D		N13	E43	5336	12 D	3				3.00			
WENDEL	21	1205 E	1222 D		N10	W19	5329	17 D	1&				5.00			
WENDEL	21	1256 E	1314 D		N08	W15	5329	18 D	1&				5.00			
CLIMAX	21	1608	1727	1635	N07	W23	5329	79	1		1635	4.10				
WENDEL	21	1613 E	1623 D		N07	W25	5329	10 D	1				4.00			Slow S-SWF
LOCKHEED	21	1628	1704	1637	N07	W22	5329	36	1	3		3.50				
MITAKA	22	0441 E	0452	0446	N07	W37	5329	11 D	1	1	0441	.72	.86	1.45	100	
MITAKA	22	0455	0504 D	0457	N24	E68	5339	9 D	1&	1	0455	1.85	5.37	2.11	120	
SIMEIZ	22	0724	0730 D	0727 U	N04	W27	5329	6 D	1	1	0727		2.10		72	
CAPRI S	22	1311 E	1342		N18	E62	5339	31 D	2	3	1324	4.00	7.20			Slow S-SWF
SAC PEAK	22	1318 E	1342	1318 U	N16	E59	5339	24 D	1	1		2.50			17	
CLIMAX	22	1511	1539	1520	S13	E85	5340	28	1		1520	4.00				S-SWF
SAC PEAK	22	1514	1530 D	1520	S12	E90	5340	16 D	1	1		3.10			20	
LOCKHEED	22	1514	1539		S11	E03	5335	25	2	3	1525	8.20				S-SWF
HAWAII	22	2202	2218	2206	N05	W35	5329	16	1	3	2206	3.00	3.70			
HAWAII	23	0138	0200 D	0144	N18	E32	5336	22 D	2	3	0144	6.20	7.40			
LOCKHEED	23	0143 E	0143 D		N19	E30	5336		1	1	0143	4.60				
SIMEIZ	23	0616 E	0635 D	0621 U	N05	W42	5329	19 D	1	1	0616		1.80	2.20	80	
SIMEIZ	23	0628	0648	0629	N19	E30	5336	20	1	1	0629		2.10	2.60	80	

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OBSERVATORY	DATE AUG 1959	OBSERVED UNIVERSAL TIME START	END	MAX PHASE	LOCATION APPROX. LAT.	MER. DIST.	McMATH PLAGE REGION	DURATION — MINUTES	IMPORTANCE	OBS. COND.	MEASUREMENTS TIME — U T	MEAS. AREA Sq. Deg.	CORR. AREA Sq. Deg.	MAX. WIDTH Ha	MAX. INT. %	PROVISIONAL IONOSPHERIC EFFECT
SIMEIZ	23	0822	0830 D	0822	N03	W46	5329	8 D	1	1	0824		1.30	1.60	72	
SIMEIZ	23	0850 E	0903	0852	N04	W55	5329	13 D	1	1	0852		1.50	2.30	84	
SIMEIZ	23	0852 E	0855 D	0852	N08	W47	5329	3 D	1	1	0855		2.60	2.30	100	
CAPRI S	23	0853 E	0907 D		N09	W42	5329	14 D	1	1	0900	2.00	2.70			
LOCARNO	23	1610	1656	1625	S10	E65	5340	46	1	3	1625		2.00			Slow S-SWF
HAWAII	23	2340 E	2410 D	2350	N19	E29	5336	30 D	1	2	2350	3.70	4.30			
HAWAII	24	0110	0120	0110	N05	W60	5329	10	1	3	0110	2.90	5.60			
LOCKHEED	24	0122	0215 D	0155	N22	E32	5339	53 D	2	1		8.30				
HAWAII	24	0126	0200 D	0150	N18	E33	5339	34 D	2&	3	0150	14.50	16.70			
SIMEIZ	24	0742	0752 D	0744 U	N16	E08	5336	10 D	1	2	0743		1.00	2.00	68	
WENDEL	24	0742 E	0754		N16	E07	5336	12 D	1				4.00			
LOCARNO	24	0907	0920		N17	E06	5336	13	1	3	0910		1.00			
LOCARNO	24	1010 E	1030		N12	E10	5336	20	1	3	1010		1.00			
LOCARNO	24	1100	1110 D		S09	E54	5340	10 D	1	2	1110		1.00			
LOCKHEED	24	2233	2332	2239	N18	E28	5339	59	2&	3		9.00				S-SWF
HAWAII	24	2236	2315	2240	N15	E29	5339	39	2&	3	2240	18.60	21.50			
MITAKA	25	0153 E	0157		N17	E26	5339	4 D	1	1	0153	6.17	7.22	1.46	87	
SIMEIZ	25	0558 E	0606 D	0601 U	N12	E30	5339	8 D	1	3	0603		1.00	1.80	76	
SIMEIZ	25	0624	0740 D	0634	N21	W00	5336	96 D	2	3	0632		6.70	3.70	196	
WENDEL	25	0627	0716 D		N21	E05	5336	49 D	2				8.00			S-SWF
WENDEL	25	0627	0716 D		N21	E00	5336	49 D	2				11.00			
CAPRI S	25	0634	0715		N18	E03	5336	41 D	2	2	0650	8.00	8.80			
SIMEIZ	25	0711	0720 D	0712	N04	E55	5341	9 D	1	3	0712		2.30		68	
ZURICH	25	0712	0719		N03	E54	5341	7	1	3	0712		3.00			
ARCETRI	25	0929 E	0939 D		S04	E90	5343	10 D	1	2	0930	.70				
MEUDON	25	0932 E	1315		S05	E90	5343	223 D	1&							Slow S-SWF
ARCETRI	25	0958 E	1007 D		S04	E90	5343	9 D	1	2	0958	2.00				
LOCARNO	25	1050	1115		N08	W83	5329	25	1&	2						
MEUDON	25	1050	1132	1104	N09	W85	5329	42	2							
ZURICH	25	1100 E	1110 D		N05	W84	5329	10 D	1	3	1100		5.00			
LOCARNO	25	1250	1258		N08	W85	5329	8	1	2						
WENDEL	25	1642	1701 D		N12	W06	5336	19 D	1&				6.00			
ZURICH	25	1643 E	1700 D		N13	W03	5336	17 D	1	2	1643		5.00			Slow S-SWF
WENDEL	25	1723 E	1736 D		S13	E42	5340	13 D	1&				5.00			
WENDEL	26	0605 E	0619 D		N17	E12	5339	14 D	1				4.00			
SIMEIZ	26	0645	0719 D	0651	S11	E35	5340	34 D	1	2	0654		1.10	2.30	112	
WENDEL	26	0648 E	0714 D		S11	E33	5340	26 D	1				4.00			
ZURICH	26	0650 E	0720		S11	E32	5340	30 D	1	3	0650		4.00			
SIMEIZ	26	0713 E	0717 D	0715 U	S23	W66	5337	4 D	1	2	0715		5.10		60	
ZURICH	26	0735 E	0740		S10	E31	5340	5 D	1	3	0735		3.00			
LOCARNO	26	0800	0819		S08	E29	5340	19	1	2						
ZURICH	26	0804	0818		S10	E29	5340	14	1	3	0804		1.00			
SIMEIZ	26	0844 E	0856 D	0850 U	N11	E35	5341	12 D	1	2	0850		2.70	1.80	80	
ZURICH	26	0852	0856		N11	E33	5341	4	1	3	0852		3.00			
SIMEIZ	26	0854 E	0900 D	0857 U	S06	E80	5343	6 D	1	2	0858		1.20	1.80	64	
ZURICH	26	0856	0902		S05	E72	5343	6	1	3	0856		1.00			
SIMEIZ	26	0859 E	0902 D	0859 U	N16	E06	5339	3 D	1	2	0859		1.40			
ZURICH	26	0859	0912		N17	E08	5339	13	1	3	0859		2.00			
ZURICH	26	0907	0943		S11	E31	5340	36	1	3	0907		5.00			S-SWF
WENDEL	26	0911 E	0945 D		S11	E31	5340	34 D	1&				7.00			

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OBSERVATORY	DATE AUG 1959	OBSERVED UNIVERSAL TIME START	END	MAX. PHASE	LOCATION APPROX. LAT.	MER. DIST.	McMATH PLAGE REGION	DURATION — MINUTES	IMPORTANCE	OBS. COND.	MEASUREMENTS TIME — U T	MEAS. AREA Sq. Deg.	CORR. AREA Sq. Deg.	MAX. WIDTH Ha	MAX. INT. %	PROVISIONAL IONOSPHERIC EFFECT
AROSA	26	0912	0930 D		S10	E33	5340	18 D	1							
ZURICH	26	0920	0938		N24	E13	5339	18	1	3	0920		3.00			
MEUDON	26	0922	0950		N10	E90	5347	28	1							
LOCARNO	26	1206	1224	1212	N10	E29	5341	18	1&	2	1212		2.00			
WENDEL	26	1212 E	1221 D		N12	E33	5341	9 D	1				3.00			
WENDEL	26	1238 E	1251 D		S09	E28	5340	13 D	1				3.00			
ZURICH	26	1311 E	1323		N11	E33	5341	12 D	1	3	1311		1.00			
WENDEL	26	1442 E	1502 D		N17	E07	5339	20 D	1				3.00			
WENDEL	26	1612 E	1630 D		N13	E06	5339	18 D	1&				7.00			
SIMEIZ	27	0646	0650 D	0647	S24	W85	5337	4 D	1	2	0647		6.60			
LOCARNO	27	0650 E	0718		N09	E80	5347	28 D	1	2						
SIMEIZ	27	0754 E	0759 D	0756 U	N22	E00	5339	5 D	1	2	0756		4.80		88	
SIMEIZ	27	0853 E	0857 D	0854 U	N13	W23	5336	4 D	1	2	0854		.30		64	
ZURICH	27	0935 E	1000		N10	E74	5347	25 D	1	3	0935		3.00			
LOCARNO	27	0925	1002	0940	S08	E14	5340	37	1&	2	0940		2.00			
ZURICH	27	0935 E	1000		S08	E15	5340	25 D	1	3	0935		3.00			
AROSA	27	0942	0950		S08	E15	5340	8	1							
ZURICH	27	1022	1032		S08	E15	5340	10	1	3	1022		3.00			
LOCARNO	27	1125 E	1155		S25	W88	5330	30 D	1	2						
LOCARNO	27	1125 E	1202		N25	E01	5339	37 D	1&	2	1125		2.00			
LOCARNO	27	1208	1230	1215	N17	W04	5339	22	1	2	1215		2.00			
WENDEL	27	1215 E	1229 D		N15	W09	5339	14 D	1&				5.00			
ZURICH	27	1222 E	1229		N17	W05	5339	7 D	1	2	1222		5.00			
LOCARNO	27	1155	1235	1210	S08	E13	5340	40	1	2	1210		2.00			
WENDEL	27	1219 E	1236 D		S10	E16	5340	17 D	2				10.00			
LOCARNO	27	1220	1250	1230	S12	E18	[illegible]	30	1&	2	1230		3.00			
ZURICH	27	1222 E	1316		S10	E18	5340	54 D	2	2	1232		9.00			
ZURICH	27	1423	1444		S10	E13	5340	21	1	2	1423		3.00			
ZURICH	27	1433	1444		N15	W37	5336	11	1	2	1433		1.00			
ZURICH	27	1500 E	1520		N10	E58	5344	20 D	1	2	1500		1.00			
ZURICH	27	1530	1533		N12	W34	5336	3	1	2	1530		1.00			
LOCARNO	27	1600	1620	1604	N18	W21	5336	20	2-	2	1604		3.00			
HUANCAYO	27	1604 E	1622	1613	N18	W19	5336	18 D	1	2	1613	2.30	2.50	2.60		
LOCARNO	27	1615	1635 D	1618	N16	W37	5336	20 D	1	2	1615		1.00			
LOCARNO	27	1605	1615		N27	W00	5339	10	1&	2	1605		1.00			
CLIMAX	28	0027	0121 D	0040	N10	E70	5347	54 D	1		0040	2.40				
HAWAII	28	0030	0108 D	0038	N07	E74	5347	38 D	1&	2	0038	3.80	12.10			G-SWF
MITAKA	28	0030	0123	0040	N13	E69	5347	53	2	1	0040	3.29	7.44	3.69	162	
LOCKHEED	28	0031 E	0128		N12	E72	5347	57 D	1	1	0050	2.20				
MITAKA	28	0427	0445	0429	N11	W03	5341	18	1	1	0427	1.03	1.03	2.16	140	
MITAKA	28	0546 E	0611		S09	E04	5340	25 D	1	1	0546	2.57	2.70	1.62	120	
MITAKA	28	0611	0703 D	0617	N22	W10	5339	52 D	1	1	0617	3.08	3.23	1.82	134	
MITAKA	28	0654	0706 D		N29	W08	5339	12 D	1	1	0654	1.03	1.11	1.57	115	
MITAKA	28	0643	0704 D		S08	E03	5340	21 D	1	1	0643	1.03	1.07	1.65	128	
LOCARNO	28	0754	0814		N13	E63	5347	20	1&	2	0800		3.00			
ZURICH	28	1109 E	1120		N22	W14	5339	11 D	1	2	1109		3.00			
ZURICH	28	1225 E	1233		N12	W47	5336	8 D	1	2	1225		4.00			
ZURICH	28	1228	1234		N18	W18	5339	6	1	2	1228		2.00			
AROSA	28	1525	1530 D		N10	E50	5344	5 D	1							
MITAKA	29	0102	0107		S10	W03	5340	5	1	1	0102	1.54	1.57	1.82	120	

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OBSERVATORY	DATE AUG 1959	OBSERVED UNIVERSAL TIME START	OBSERVED UNIVERSAL TIME END	OBSERVED UNIVERSAL TIME MAX. PHASE	LOCATION APPROX. LAT.	LOCATION APPROX. MER. DIST.	LOCATION McMATH PLAGE REGION	DURATION — MINUTES	IMPORTANCE	OBS. COND.	MEASUREMENTS TIME — U T	MEASUREMENTS MEAS. AREA Sq. Deg.	MEASUREMENTS CORR. AREA Sq. Deg.	MEASUREMENTS MAX. WIDTH Hα	MEASUREMENTS MAX. INT. %	PROVISIONAL IONOSPHERIC EFFECT
LOCKHEED	29	020ε	0214 D	0206	N08	E47	5347	8 D	1	1		3.70				S-SWF
MITAKA	29	0207 E	0217		N08	E46	5347	10 D	1&	1	0211	3.08	4.37	2.15	278	
MITAKA	29	0417	0437	0428	S10	W05	5340	20	1	1	0427	.77	.79	2.44	149	
MITAKA	29	0454	0501		S10	W05	5340	7	1	1	0454	.62	.63	3.48	131	
MEUDON	29	0601 E	0620		S11	W09	5340	19 D	1							
ZURICH	29	0930 E	0944		S10	W08	5340	14 D	1	3	0930		2.00			
ZURICH	29	0948	1005		N14	W18	5341	17	1	3	0948		1.00			
LOCARNO	29	1320 E	1345		N28	W25	5339	25 D	1&	2						
LOCARNO	29	1330	1400		N15	W60	5336	30	1&	2						
CAPRI S	29	1334 E	1353 D		N07	W55	5336	19 D	1	3	1340	1.20	2.10			
AROSA	29	1415	1425 D		N35	E08	5345	10 D	1							
LOCARNO	29	1523	1535		N08	E38	5344	12	1	2						
LOCARNO	29	1550	1625		N13	W20	5341	35	1	2						
SAC PEAK	29	1722	1740	1728	N08	E36	5344	18 D	1	2		3.60			22	Slow S-SWF
LOCKHEED	29	2245	2340	2253	N13	W25	5339	55	1	3		2.20				S-SWF
LOCKHEED	29	2221	2320	2300	N12	E39	5344	59	1	3		2.50				G-SWF
HAWAII	29	2250 E	0020		N10	E37	5344	90 D	1&	2	2256	3.80	4.80			G-SWF
CLIMAX	29	2328 E	2336 D		N12	E38	5344	8 D	1		2336	2.10				
HAWAII	29	2250 E	2328		N14	W03	5341	38 D	2	3	2256	5.60	6.10			
HAWAII	30	0056	0106	0058	S12	E90	5353	10	1&	3	0058	1.00				
MITAKA	30	0058 E	0110	0101	S11	E84	5353	12 D	1	1	0058	.80		3.76		
MITAKA	30	0424	0431		N08	E23	5344	7	1	1	0424	1.01	1.14	1.35	100	
MITAKA	30	0432	0435		N12	E35	5347	3	1	1	0432	1.01	1.33	1.31	105	
MITAKA	30	0511	0516		S08	W24	5340	5	1	1	0511	1.01	1.11	1.10	102	
SIMEIZ	30	0634	0638	0635	N16	W77	5336	4	1	1	0636		3.50		76	Slow S-SWF
SIMEIZ	30	0727 E	0750 D	0729	S19	E64	5350	23 D	1&	1	0729		4.70	5.00	100	
SIMEIZ	30	0730 E	0820 D	0731 U	S12	E75	5353	50 D	1&	1	0732		4.30	5.20	72	
SIMEIZ	30	0834 E	0847 D	0836 U	N11	W73	5336	13 D	1	1	0838		4.20	2.20	68	
LOCARNO	30	1415 E	1430 D		S11	W24	5340	15 D	1	2						
LOCKHEED	30	1535	1630	1545	N11	W36	5339	55	1	3		4.20				
SAC PEAK	30	1536	1644 U	1544	N15	W37	5339	68 D	2	3		7.35			18	Slow S-SWF
CAPRI S	30	1542 E	1621		N13	W37	5339	39 D	1&	2	1548	4.30	5.10			
CLIMAX	30	1720	1724 D		S01	E69	5351	4 D	1		1724	2.20				
CLIMAX	30	1742 E	1810	1743	S07	W30	5340	28 D	1		1743	2.10				
SAC PEAK	30	2018	2044	2026	S08	W30	5340	26	1	3		2.50			14	
HAWAII	30	2020	2040	2028	S10	W29	5340	20	1	3	2028	3.30	4.00			
HAWAII	30	2348	2402	2350	N10	E11	5344	14	1&	3	2350	4.10	4.20			S-SWF
MITAKA	31	0406 E	0448 D	0422	N11	E24	5344	42 D	1	1	0406	2.57	2.80	1.92	149	
CAPRI S	31	0729 E	0745		S19	E60	5353	16 D	1	1	0730	1.20	2.80			Slow S-SWF
CAPRI S	31	1026 E	1031 D		S12	W35	5340	5 D	1	1	1027	2.50	3.10			
ZURICH	31	1032	1045		S13	W37	5340	13	1	2	1032		4.00			
ZURICH	31	1240 E	1252		N27	W46	5339	12 D	1	2	1240		1.00			
ZURICH	31	1421	1425		N09	E03	5344	4	1	2	1421		1.00			
LOCARNO	31	1500 E	1525		N11	E20	5344	25 D	1&	2						
MEUDON	31	1502	1546 D	1525	N10	E05	5344	44	1				3.00			
LOCARNO	31	1502	1550		N10	E04	5344	48	1	2						
CAPRI S	31	1510	1547 D		N10	E04	5344	37 D	1	3	1519	2.20	2.20			
HUANCAYO	31	1520 E	1553	1532	N09	E04	5344	33 D	1	1	1532	2.90	2.90	2.00		
ZURICH	31	1534 E	1548 D		N10	E03	5344	14 D	1	2	1534		3.00			
MEUDON	31	1543 E	1635 D		S14	E70	5353	52 D	1							
ZURICH	31	1545	1617		S13	E62	5353	32	1	2	1545		10.00			Slow S-SWF

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OBSERVATORY	DATE AUG 1959	OBSERVED UNIVERSAL TIME			LOCATION			DURATION — MINUTES	IMPORTANCE	OBS. COND.	MEASUREMENTS					PROVISIONAL IONOSPHERIC EFFECT
		START	END	MAX. PHASE	APPROX. LAT.	APPROX. MER. DIST.	McMATH PLAGE REGION				TIME — U T	MEAS. AREA Sq. Deg.	CORR. AREA Sq. Deg.	MAX. WIDTH Hα	MAX. INT. %	
CAPRI S	31	1546 E	1606 D		S12	E65	5353	20 D	1	3	1553	1.20	2.90			
LOCARNO	31	1550	1620 D	1555	S12	E68	5353	30 D	1	2						
ZURICH	31	1607	1617		N17	E28	5348	10	1	2	1607		2.00			
SAC PEAK	31	1618	1632	1626	N15	E29	5344	14	1	2		2.50			15	
CLIMAX	31	1850	1949 D	1915	N09	E11	5344	59 D	1		1915	4.90				
LOCKHEED	31	1850	2030	1907	N10	E11	5344	100	1&	3		3.90				Slow S-SWF
HAWAII	31	1852	2030	1909	N10	E11	5344	98	2	3	1909	9.50	9.70			
SAC PEAK	31	2029 E	2054	2029 U	N10	E10	5344	25 D	1	2		2.50			15	
SAC PEAK	31	2029 E	2046	2029 U	S09	W42	5340	17 D	1	2		2.18			17	
SAC PEAK	31	2222	2332	2252	S08	W46	5340	70	2&	2		9.28			35	
HAWAII	31	2234	2330	2252	S07	W46	5340	56	2&	3	2252	13.60	20.60			S-SWF
LOCKHEED	31	2235	2323	2252	S08	W46	5340	48	2&	3		5.50				
SAC PEAK	31	2316	2344	2320	S28	W53	5340	28	1	2		2.32			16	

Errata:

The areas reported for Sacramento Peak in the July 1959 flare table published in CRPL-F 180 Part B, August 1959, were incorrectly placed in the corrected area column. They belong in the measured area column.

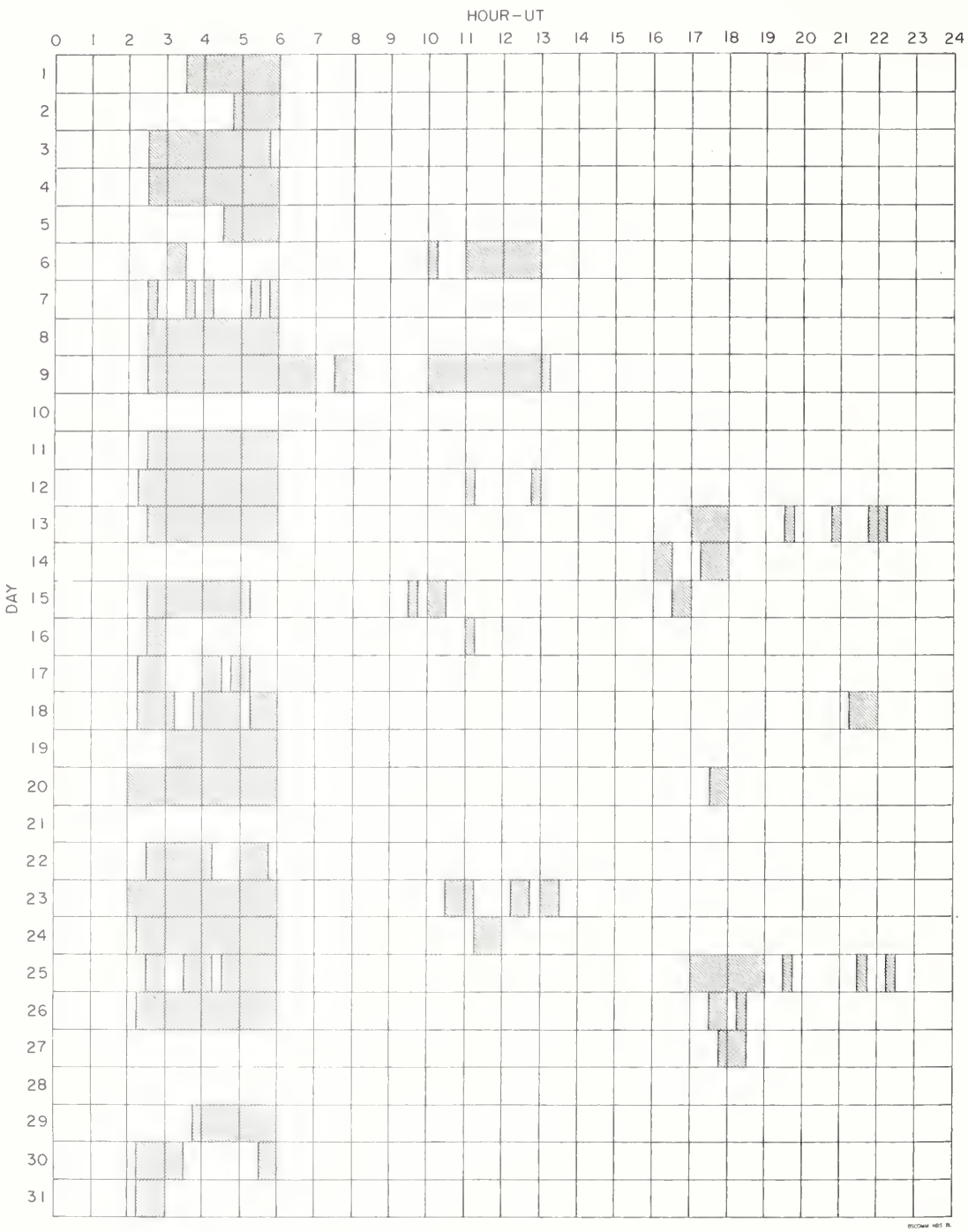
CAPRI G	ANACAPRI - GERMAN
CAPRI S	ANACAPRI - SWEDISH
GOOD HOPE	ROYAL OBSERVATORY, CAPE OF GOOD HOPE
KIEV*	KIEV UNIVERSITY
KODAIKNAL	KODAIKANAL
KRASNYA	KRASNAYA PAKHRA
LOCKHEED	LOS ANGELES
MOSCOW-G	MOSCOW - GAISH
R O EDIN	ROYAL OBSERVATORY, EDINBURGH
R O HERST	GREENWICH ROYAL OBSERVATORY, HERSTMONCEUX
SAC PEAK	SACRAMENTO PEAK
SCHAUINS	SCHAUINSLAND
USNRL	UNITED STATES NAVAL RESEARCH LABORATORY

SAC PEAK: ALL VALUES IN MAX. INT. COLUMN ARE ARBITRARY UNITS (0-40), NOT PERCENT OF CONTINUOUS SPECTRUM.

E - LESS THAN
D - GREATER THAN
U - APPROXIMATE
& - PLUS
\- - MINUS
▢ - NOT REPORTED

INTERVALS OF NO FLARE PATROL OBSERVATIONS

AUGUST 1959



Stations Include:

Anacapri (Swedish)
Arcetri
Arosa
Climax
Dunsink
Hawaii
Huancayo
Locarno
Lockheed
Meudon
Mitaka
Nizamiah
Royal Greenwich Observatory
Herstmonceux
Sacramento Peak
Simeiz
Zurich.

Noted as follows: Date-Universal Time-Coordinates

JULY 1959

LOCKHEED	01	0008	N11 W15	
LOCKHEED	01	0012	N12 E44	
LOCKHEED	01	0058	N09 W17	
LOCKHEED	01	0146	N21 W41	
MCMATH	01	1121	S15 W85	
* CAPRI S	01	1140	N15 W59	
MCMATH	01	1144	S15 W86	
SAC PEAK	01	1408	N13 E46	
SAC PEAK	01	1408	N11 W90	
SAC PEAK	01	1705 E	N17 E66	
LOCKHEED	01	1728	S10 W41	
MCMATH	01	1730 E	N11 W90	
LOCKHEED	01	1834	S11 W43	
* LOCKHEED	01	1915	N17 W69	
LOCKHEED	01	1918	N05 E35	
LOCKHEED	01	1956	N13 E46	
SAC PEAK	01	1958	N34 W34	
SAC PEAK	01	2010	N28 W57	
LOCKHEED	01	2011	N15 E61	
LOCKHEED	01	2014	N29 W57	
MCMATH	01	2105 E	N10 W90	
LOCKHEED	01	2202	N15 W50	
LOCKHEED	01	2203	N14 E39	
CLIMAX	01	2205	N13 E61	
LOCKHEED	01	2233	N15 E46	
SAC PEAK	01	2240	N29 W58	
LOCKHEED	01	2241	N29 W58	
LOCKHEED	01	2243	N26 W63	
* LOCKHEED	01	2248	N18 E62	
LOCKHEED	01	2307	N17 W69	
SAC PEAK	01	2310	N17 W67	
* LOCKHEED	02	0027	S17 W21	
LOCKHEED	02	0119	S15 W55	
LOCKHEED	02	0213	S15 W54	
CAPRI S	02	0541 E	N16 E53	
* CAPRI S	02	0943 E	N16 W71	
* CAPRI G	02	0953 E	N14 W70	
CAPRI G	02	0954 E	N18 E55	
SAC PEAK	02	1256	N11 E14	
SAC PEAK	02	1336	N18 E56	
MCMATH	02	1340	N16 E57	
MCMATH	02	1351	N16 E57	
LOCARNO	02	1430	N24 W81	
LOCKHEED	02	1616	S16 W68	
LOCKHEED	02	1738	S16 W62	
MCMATH	02	1738	S12 W62	
LOCKHEED	02	1808	N27 W14	
HAWAII	02	181	N28 W13	
MCMATH	02	2100 E	N29 W04	
LOCKHEED	02	2306	N28 W16	
LOCKHEED	02	2310	N16 W72	
CAPRI G	03	0529 E	N19 W66	
CAPRI G	03	0730 E	N13 E24	
MCMATH	03	1135 E	S18 W70	
MCMATH	03	1138	N16 E35	
STOCKHOLM	03	1056 E	N11 E13	
MCMATH	03	1114	N19 E48	
SAC PEAK	03	1324	N27 W76	
LOCARNO	03	1535 E	N10 E10	
LOCKHEED	03	1628	N10 E07	
MCMATH	03	1653	N16 E58	
SAC PEAK	03	1700 E	N17 E56	
MCMATH	03	1841	N16 E54	
MCMATH	03	1810	N19 E08	
MCMATH	03	1827 E	N19 E08	
HAWAII	03	1844	N11 E08	
MCMATH	03	1910	N10 E08	
MCMATH	03	1918	N19 E19	
LOCKHEED	03	1919	N12 E18	
SAC PEAK	03	1922 E	N12 E19	
HAWAII	03	1930 E	N13 E19	
MCMATH	3	2019	S15 W32	
HAWAII	03	2020	S15 W31	
LOCKHEED	03	2047	S14 W34	
MCMATH	03	2059	N09 E05	
LOCKHEED	03	2122	N08 W24	
LOCKHEED	03	2253	N11 E16	
LOCKHEED	03	2356	N11 E16	
LOCKHEED	04	0210	N14 E12	
* CAPRI G	04	0627 E	N10 E06	
ARCETRI	04	0935 E	N11 E09	
STOCKHOLM	04	0935	N1 E16	
CAPRI G	04	0946 E	N12 E11	
CAPRI G	04	1012 E	N12 E11	
MCMATH	04	1113	N08 E07	
MCMATH	04	1226	N11 W04	
SAC PEAK	04	1319 E	N09 E06	
MCMATH	04	1350	N11 E08	
MCMATH	04	1415	N14 W04	
CAPRI S	04	1416 E	N13 W12	
LOCARNO	04	1425	N 8 W 0	
MCMATH	04	1436	N09 W04	
* MCMATH	04	1539	S03 E87	
* CAPRI S	04	1540 E	S11 E08	
LOCARNO	04	1605	N12 E16	
MCMATH	04	1629	N09 W05	
LOCKHEED	04	1650	N26 W40	
MCMATH	04	1720 E	N10 W12	
LOCKHEED	04	1811	N08 E12	
HAWAII	04	1812	N12 E06	
SAC PEAK	04	1815 E	N11 E05	
HAWAII	04	1824	N14 E12	
MCMATH	04	1831	N09 W06	
MCMATH	04	2013	N14 E08	
MCMATH	04	2017	N09 W06	
MCMATH	04	2030	N09 W16	
HAWAII	04	2044	N09 W07	
MCMATH	04	2044	N09 W06	
MCMATH	04	2058	N09 W16	
MCMATH	04	2110	N09 W09	
MCMATH	04	2126	N09 W07	
MCMATH	04	2210	N09 W17	
LOCKHEED	04	2234	N12 E13	
MCMATH	04	2241 E	N11 E06	
LOCKHEED	04	2249	N09 W09	
LOCKHEED	04	2313	N14 W06	
HAWAII	05	0018	N09 W09	
LOCKHEED	05	0018	N09 W09	
HAWAII	05	0126 E	N09 W09	
WENDEL	05	0528 E	N13 W04	
* SIMEIZ	05	0715 E	N14 E56	
* CAPRI S	05	0718 E	N08 E57	
* CAPRI S	05	0802 E	S12 W55	
* WENDEL	05	0815 E	S13 W49	
* CAPRI S	05	0952 E	N21 W01	
WENDEL	05	1131 E	N 7 W14	
* WENDEL	05	1308 E	N07 W17	
* WENDEL	05	1344 E	N08 W18	
* SAC PEAK	05	1429	N08 W19	
SAC PEAK	05	1517 E	N09 W00	
MCMATH	05	1728	N11 W24	
MCMATH	05	1801	N14 E13	
MCMATH	05	1859 E	N10 W20	
MCMATH	05	1914 E	N16 E64	
MCMATH	05	2034	N1 W21	
LOCKHEED	05	2139	N10 W10	
MCMATH	05	2210 E	N10 W19	
SAC PEAK	05	2235	N08 W23	
SAC PEAK	05	2333	N19 E90	
* HAWAII	05	2338 E	N11 W22	
* SAC PEAK	05	2341	N09 W24	
CAPRI S	06	1158 E	N09 W35	
MCMATH	06	1212 E	N10 W30	
MCMATH	06	1438	N10 W31	
MCMATH	06	1524	N10 W31	
MCMATH	06	1553	N16 W25	
LOCKHEED	06	1625 E	N16 W26	
MCMATH	06	1625	N16 W25	
LOCKHEED	06	1634	N11 W20	
MCMATH	06	1635	N11 W20	
SAC PEAK	06	1655	N11 W20	
LOCKHEED	06	1808	N13 W24	
MCMATH	06	1808	N13 W23	
LOCKHEED	06	1810	N17 W09	
LOCKHEED	06	1835	N15 E47	
LOCKHEED	06	1857	N13 W25	
LOCKHEED	06	1905	N17 W10	
* SAC PEAK	06	1928	N13 W28	
* HUANCAYO	06	1939 E	N12 W27	
SAC PEAK	06	1942	N13 E46	
LOCKHEED	06	1942	N15 E47	
MCMATH	06	1944	N12 E46	
HUANCAYO	06	1950 E	N08 E30	
LOCKHEED	06	2037	N16 W29	
MCMATH	06	2135	N12 W29	
LOCKHEED	06	2137	N12 W28	
LOCKHEED	06	2154	N10 W34	
SAC PEAK	06	2158	N17 W12	
LOCKHEED	06	2159	N17 W12	
MCMATH	06	2159	N17 W11	
LOCKHEED	07	0144	S03 E54	
LOCARNO	07	0650	N07 W41	
SIMEIZ	07	0651 E	N05 W40	
CAPRI G	07	0653 E	N07 W41	
* LOCARNO	07	0715	N18 E39	
* CAPRI S	07	0719 E	N16 E40	
* STOCKHOLM	07	1031	N16 W11	
MCMATH	07	1048	N10 E28	
MCMATH	07	1057	S11 E31	
LOCARNO	07	1125	N11 W43	
MCMATH	07	1125	N11 W44	
* CAPRI G	07	1248 E	N11 W36	
* MCMATH	07	1249	N12 W39	
* CAPRI S	07	1256	N18 E90	
LOCARNO	07	1627	N11 W38	
LOCKHEED	07	1656	N15 W46	
LOCKHEED	07	1824	N13 E33	
LOCKHEED	07	2258	N10 W05	
* CAPRI G	08	0618 E	N12 W52	
WENDEL	08	0632 E	N10 W51	
WENDEL	08	0744 E	N10 W50	
* WENDEL	08	0823 E	N13 W46	
MCMATH	08	1106	N14 E88	
MCMATH	08	1131	N14 E88	
MCMATH	08	1141	N14 E88	
MCMATH	08	1239	N12 W48	
MCMATH	08	1315	N13 W57	
MCMATH	08	1342	N18 W31	
MCMATH	08	1347	N14 W49	
MCMATH	08	1411	N14 E86	
MCMATH	08	1432	N13 W50	
* MCMATH	08	1442	N14 E88	
MCMATH	08	1457	N12 E29	
MCMATH	08	1512	N13 W50	
HUANCAYO	08	1534 E	N15 W42	
* MCMATH	08	1546	N15 E78	
* ZURICH	08	1551	N16 E68	
* SAC PEAK	08	1557 E	N19 E73	
* LOCKHEED	08	1623	N18 E83	
CLIMAX	08	1624	N11 E26	
* SAC PEAK	08	1624	N16 E85	
* MCMATH	08	1624	N14 E85	
LOCKHEED	08	1657	N10 W58	
LOCKHEED	08	1716	N08 W57	
MCMATH	08	1747	N16 E85	
LOCKHEED	08	1821	N14 W52	
LOCKHEED	08	1836	N13 W34	
LOCKHEED	08	1849	N17 E79	
MCMATH	08	1850	N16 E85	
HAWAII	08	1906 E	N26 E87	
MCMATH	08	1927	N16 E85	
HAWAII	08	1928	N26 E87	
MCMATH	08	1942	N13 W53	
MCMATH	08	2003 E	N15 E50	
LOCKHEED	08	2024	N14 W36	
* LOCKHEED	08	2034	N14 E83	
LOCKHEED	08	2121	N14 E83	
MCMATH	08	2134 E	N14 E25	
MCMATH	08	2134 E	N15 W42	
LOCKHEED	08	2151	N14 W55	
MCMATH	08	2151	N13 W36	
MCMATH	08	2232 E	N14 E80	
MCMATH	08	2242	N13 W56	
MCMATH	08	2245	N07 E11	
LOCKHEED	08	2248	N07 E11	
MCMATH	08	2320	S13 E09	
LOCKHEED	08	2251	S06 E45	
MCMATH	08	2251	N18 W41	
LOCKHEED	08	2336	N16 W50	
LOCKHEED	09	0034	N16 E17	
LOCKHEED	09	0048	N13 W55	
HAWAII	09	0052	N13 W56	
* CAPRI S	09	0645 E	N05 W69	
WENDEL	09	0656 E	N12 W49	
* CAPRI S	09	0706 E	N15 E71	
* SIMEIZ	09	0817 E	N18 E70	
MCMATH	09	1150 E	N14 E72	
* CLIMAX	09	1252	N20 W47	
* STOCKHOLM	09	1254	N20 W46	
LOCARNO	09	1404	N19 W71	
* WENDEL	09	1451 E	N15 E67	
MCMATH	09	1804	N07 E46	
MCMATH	09	1818 E	N11 W80	
MCMATH	09	1940	N15 W72	
MCMATH	09	2055	N10 W76	
MCMATH	09	2150 E	N12 W75	
MCMATH	09	2227	N09 W30	
LOCARNO	10	0600	N13 W66	
LOCARNO	10	0925	N08 W31	
LOCARNO	10	1010	N15 E57	
MCMATH	10	1159	N11 E55	
MCMATH	10	1235 E	S20 E90	
MCMATH	10	1246	N13 E55	
* MCMATH	10	1316	N14 E56	
SAC PEAK	10	1316	N06 E55	
* WENDEL	10	1316 E	N16 E52	
* CAPRI G	10	1317 E	N16 E55	
* LOCARNO	10	1320	N17 E56	
* LOCARNO	10	1410	N10 W80	
WENDEL	10	1446 E	N16 E57	
CLIMAX	10	1645	S28 E90	
MCMATH	10	1645	S29 E90	
MCMATH	10	1646	S17 E26	
SAC PEAK	10	1646 E	S26 E90	
LOCKHEED	10	1648	S15 E25	
MCMATH	10	1730 E	N15 E55	
MCMATH	10	1750	N16 W45	
LOCKHEED	10	1751	N17 E05	
MCMATH	10	1817	S18 E26	
LOCKHEED	10	1823	S22 E90	
MCMATH	10	1823	S24 E90	
MCMATH	10	1925 E	N14 W85	
MCMATH	10	2002	S29 E90	
MCMATH	10	2036 E	N14 W85	
MCMATH	10	2046	N14 W85	
MCMATH	10	2047 E	N20 W68	
HAWAII	10	2050	N14 W82	
MCMATH	10	2140	S17 E24	
MCMATH	10	2243 E	S15 E21	
LOCKHEED	10	2251	S14 E20	
MCMATH	10	2252	N08 W48	
LOCKHEED	10	2252	N07 W37	
HAWAII	10	2304	S14 E20	
CLIMAX	11	0014	S29 E90	
CAPRI G	11	0553 E	N17 W12	
WENDEL	11	0609 E	S13 E17	
WENDEL	11	0616 E	N16 W69	
* ARCETRI	11	0841 E	N17 E46	
* LOCARNO	11	0922	N16 E41	
MCMATH	11	1219 E	N08 W54	
MCMATH	11	1239 E	N04 E70	
MCMATH	11	1240 E	N15 E45	
MCMATH	11	1244	N15 W90	
SAC PEAK	11	1253 E	N14 W90	
MCMATH	11	1355 E	N09 W53	
SAC PEAK	11	1450	N16 W74	
MCMATH	11	1507	N16 E45	
CAPRI G	11	1511 E	N16 E41	
SAC PEAK	11	1542	N14 W90	
SAC PEAK	11	1716	N16 W41	
MCMATH	11	1845 E	N14 E65	
LOCKHEED	11	2006	S14 E08	
MCMATH	11	2022	S26 E80	
* LOCKHEED	11	2100	N17 E37	
MCMATH	11	2240 E	N09 W59	
MCMATH	11	2311 E	N19 E27	
* CAPRI S	12	0626 E	N07 W60	
* CAPRI S	12	0634 E	N13 E33	
* WENDEL	12	0857 E	N16 E32	
* CAPRI G	12	0914 E	N18 E34	
* MCMATH	12	1210 E	N09 W67	
* CAPRI S	12	1213	N19 E30	
* CAPRI S	12	1214	S11 W00	
LOCARNO	12	1315 E	S23 E63	
MCMATH	12	1316	S28 E67	
MCMATH	12	1338	N15 E62	
MCMATH	12	1419 E	N18 W70	
MCMATH	12	1520	N08 W70	
CLIMAX	12	1603	N08 E90	
MCMATH	12	1628 E	N08 W70	
MCMATH	12	1633	S26 E68	
* MCMATH	12	1633	N22 E90	
* CLIMAX	12	1636	N24 E90	
WENDEL	12	1642 E	N13 E27	
MCMATH	12	1700	N05 E70	
SAC PEAK	12	1742	N18 E31	
MCMATH	12	1743	N16 E30	
LOCKHEED	12	1744	N20 E30	
MCMATH	12	1759	N05 E70	
SAC PEAK	12	1800	N07 E64	
LOCKHEED	12	1801	N08 E65	
SAC PEAK	12	1828	N06 W67	
SAC PEAK	12	1838	S14 W14	
LOCKHEED	12	1908	N21 E15	
MCMATH	12	1910 E	N20 E16	
SAC PEAK	12	1940	S14 W04	
* LOCKHEED	12	2003	N06 W69	
* SAC PEAK	12	2008	N06 W67	
* SAC PEAK	12	2044 E	S14 W05	
* LOCKHEED	12	2059	S13 W08	
* LOCKHEED	12	2247	S22 E60	
SAC PEAK	12	2310	N27 E87	
SAC PEAK	12	2318	S14 W07	
LOCKHEED	12	2318	S13 W06	
CLIMAX	12	2321	N09 E62	
SAC PEAK	12	2322	N08 E59	
LOCKHEED	13	0000	N19 W34	
CAPRI G	13	0522	S12 W09	
CAPRI G	13	0601 E	S12 W09	
WENDEL	13	0604 E	S12 W13	
WENDEL	13	0609 E	N14 E21	
LOCARNO	13	0738	N01 E87	
ARCETRI	13	0847 E	S13 W12	
* CAPRI S	13	1000 E	N16 E15	
* MCMATH	13	1050 E	N06 W85	
MCMATH	13	1205	S14 W14	
CAPRI G	13	1207 E	S12 W11	
* MCMATH	13	1325	N11 E87	
MCMATH	13	1440 E	N07 E53	
MCMATH	13	1507	N18 E54	
MCMATH	13	1535	N18 E54	
MCMATH	13	1600 E	N12 E53	
SAC PEAK	13	1610	N06 W77	
LOCARNO	13	1617	N17 E53	
MCMATH	13	1725	N10 W86	
SAC PEAK	13	1728	N10 W78	
SAC PEAK	13	1742	N06 W80	
* SAC PEAK	13	1826	S24 E49	
* LOCKHEED	13	1827	S24 E49	
SAC PEAK	13	1828	S12 W60	
* LOCKHEED	13	1832	S30 E47	
SAC PEAK	13	1836	N05 W90	
MCMATH	13	1840 E	N25 E76	
* SAC PEAK	13	1900	S22 E47	
SAC PEAK	13	1904	N15 E12	
HAWAII	13	1908	N16 E10	
MCMATH	13	1932	N10 W88	
* HAWAII	13	1942 E	S22 E45	
MCMATH	13	2040	N08 W88	
SAC PEAK	13	2110	N06 W80	

* Rated as flare of importance ≥1 by other observatories (see CRPL 180 Part B).

SUBFLARES

Noted as follows: Date-Universal Time-Coordinates

JULY 1959

	MCMATH	13	2231	N16 E70
	MCMATH	13	2245 E	N16 E56
	SAC PEAK	13	2304 E	N17 E56
	LOCKHEED	13	2337	N06 W87
	SAC PEAK	13	2338	N06 W90
	LOCKHEED	14	0002	N11 E79
	WENDEL	14	0922 E	N12 E10
	MCMATH	14	1056 E	N21 W03
*	MCMATH	14	1140	N13 E05
*	CAPRI S	14	1144 E	N11 E05
	MCMATH	14	1249	N03 E22
*	MCMATH	14	1330	N15 W02
	SAC PEAK	14	1558	N16 W02
	LOCKHEED	14	1600	N16 W05
	SAC PEAK	14	1614	N14 W90
	MCMATH	14	1615	N14 W90
	LOCKHEED	14	1617	N14 W90
	LOCKHEED	14	1623	N18 E12
	SAC PEAK	14	1623	N18 E12
	LOCKHEED	14	1629	N19 W12
	SAC PEAK	14	1633	N19 W11
*	LOCKHEED	14	1733 E	N13 E01
	LOCKHEED	14	1830	N19 W19
	SAC PEAK	14	1950	N02 E18
	MCMATH	14	1951	N03 E19
	LOCKHEED	14	1952	N03 E18
	MCMATH	14	2006	N12 W02
	LOCHEED	14	2026	N06 E21
	SAC PEAK	14	2028	N05 E20
	SAC PEAK	14	2028	N14 E00
	MCMATH	14	2028	N12 W02
	LOCKHEED	14	2030	N12 W01
	LOCKHEED	14	2150	N14 W08
	SAC PEAK	14	2052	N14 W07
	MCMATH	14	2052	N13 W09
	LOCKHEED	14	2127	N17 W06
	MCMATH	14	2129	N14 W05
	SAC PEAK	14	2130	N15 W03
	LOCKHEED	14	2324	N26 E58
*	STOCKHOLM	15	1954 E	N15 W08
*	SAC PEAK	15	1400	N12 W11
	SAC PEAK	15	1616	N16 W14
	SAC PEAK	15	1708	N15 W16
	SAC PEAK	15	1734	N16 W15
	LOCKHEED	15	1730	N16 W15
	LOCKHEED	15	1756	N18 W15
*	SAC PEAK	15	1800	N20 W17
	LOCKHEED	15	1802	N13 W12
*	LOCKHEED	15	1825	N17 W17
*	LOCKHEED	15	1901	S29 E21
	LOCKHEED	15	2042	N20 W18
*	LOCKHEED	15	2139	N20 W18
*	LOCKHEED	15	2156	N21 W18
	LOCKHEED	15	2211	N15 W20
	SAC PEAK	15	2334 E	N07 E07
	LOCKHEED	15	2334	S16 W48
	SAC PEAK	15	2336	S15 W47
*	LOCKHEED	15	2346	N21 W19
	LOCKHEED	16	0021	N16 W22
	LOCKHEED	16	0024	N06 E04
	HAWAII	16	0028	N13 W22
	LOCKHEED	16	0206	N15 W20
*	ARCETRI	16	0924 E	N15 W29
	STOCKHOLM	16	0944	N12 W21
	ARCETRI	16	0947 E	N12 W22
	MCMATH	16	1149	N15 W33
	MCMATH	16	1215	S07 W65
	MCMATH	16	1350	S07 W65
	LOCARNO	16	1535	S12 W56
*	SAC PEAK	16	1538	N13 W32
*	MCMATH	16	1540 E	N15 W33
	SAC PEAK	16	1631	N16 W30
	LOCKHEED	16	1705	N20 E17
	MCMATH	16	1708	N18 E18
*	LOCKHEED	16	1721	N20 W28
	LOCKHEED	16	1753	N21 E42
	LOCKHEED	16	1834	N21 W29
	LOCKHEED	16	1844	N14 W33
	LOCKHEED	16	1908	N20 W31
	LOCKHEED	16	1927	N15 W43
	LOCHEED	16	2027	N27 E05
	LOCKHEED	16	2029	N25 E31
	LOCKHEED	17	0040	N18 W35
	MCMATH	17	1138 E	N18 W40
*	CAPRI S	17	1219	N23 W36
	MCMATH	17	1239 E	N25 E25
*	R O HERGT	17	1339	N12 W40
*	SAC PEAK	17	1344 E	N13 W39
	SAC PEAK	17	1430	N08 E31
	LOCARNO	17	1618	N10 E28
*	LOCKHEED	17	1703	N09 E28
*	LOCKHEED	17	1833	N16 W46
	LOCKHEED	17	1842	N16 W45
	LOCKHEED	17	1900	N18 W36
	LOCKHEED	17	1922	N16 W46
*	MCMATH	17	1945 E	N23 W43
	LOCKHEED	17	2019	N12 E34
	LOCKHEED	17	2 36	N17 W47
	LOCKHEED	17	2155	N21 W57
	LOCKHEED	18	211	N19 W65
*	SIMEIZ	18	0718	N15 E25
*	SIMEIZ	18	0718	N22 W61
*	SIMEIZ	18	846	N13 W55
*	ARCETRI	18	0901	N10 E21
*	STOCKHOLM	18	1103	N21 W53
	STOCKHOLM	18	1138	N21 W65
	STOCKHOLM	18	1205	N08 E15
	STOCKHOLM	18	1211	N15 E05
	STOCKHOLM	18	1211	N14 W01
	LOCARNO	18	1320	N21 W48
	LOCARNO	18	1425	N21 W45
*	SAC PEAK	18	1510	N19 W70
	LOCARNO	18	1515	N20 W66
	CAPRI S	18	1538 E	N19 W66
	LOCKHEED	18	1653	N15 E61
	SAC PEAK	18	1708	N19 W70
	LOCKHEED	18	1710	N19 W70
*	LOCKHEED	18	1754	N16 W59
	LOCKHEED	18	1809	N19 E20
	HAWAII	18	1812	N17 E19
	LOCKHEED	18	1909	N19 W62
	LOCKHEED	18	1924	N13 W61
	LOCKHEED	18	1941	N35 E14
	LOCKHEED	18	2031	N14 W62
	LOCKHEED	18	2324	N14 W63
	HAWAII	18	2326	N13 W63
	CAPRI G	19	0554 E	N22 W70
	LOCARNO	19	830	N19 W82
	MCMATH	19	1325 E	N23 W87
	MCMATH	19	1325 E	N29 E29
	SAC PEAK	19	1341	N28 E28
	CAPRI	19	1341 E	N29 E29
	MCMATH	19	2015	N20 W90
	SAC PEAK	19	2136	N18 W88
	LOCKHEED	19	2228 E	N12 W70
	SAC PEAK	19	2230 U	N12 W70
	LOCKHEED	20	0018	N11 E23
*	LOCARNO	20	0800	N20 W90
*	ARCETRI	20	0840	N15 W08
*	CAPRI G	20	0851 E	N16 W06
	SAC PEAK	20	1336	N13 W06
*	SAC PEAK	20	1348	S18 E67
	SAC PEAK	20	1524	N13 W07
	WENDEL	20	1528 E	N13 W09
*	SAC PEAK	20	1536	N14 W80
*	CLIMAX	20	1540	N12 W80
	LOCKHEED	20	1851	N19 W37
	LOCKHEED	20	1926	N15 W46
	LOCKHEED	20	1935	N31 W17
	MCMATH	20	2052	N21 W90
	LOCKHFED	20	2149	N30 E14
	LOCKHEED	20	2221	N22 W90
	LOCKHEED	20	2322	N22 W90
*	CAPRI S	21	1025 E	S17 E50
	SAC PEAK	21	1442	N20 W56
	CAPRI G	21	1442 E	N20 W51
	SAC PEAK	21	1548	N23 W90
	LOCKHEED	21	2015	N14 W25
	MCMATH	21	2024	S20 E90
	LOCKHEED	21	2025	S16 E90
	LOCKHEED	21	2041	N14 W25
	LOCKHEED	21	2053	N19 W14
	SAC PEAK	22	1548	S16 E80
*	SAC PEAK	22	1530	S15 E78
*	CLIMAX	22	1533	S15 E79
	SAC PEAK	22	1726	N12 E90
	HAWAII	22	2018	S17 E36
	LOCKHEED	22	2329	N31 W41
*	LOCKHEED	22	2351	N15 W37
	LOCKHEED	23	1646	N23 E79
	LOCKHEED	23	1756	N23 E79
	LOCKHEED	23	2118	N27 E17
	HAWAII	23	2121	N27 E17
	LOCKHEED	23	2230	S19 E21
	ARCETRI	24	0822 E	N11 W57
	SAC PEAK	24	1346	N18 E50
	LOCKHEED	24	1534	N31 E65
	LOCKHEED	24	1538	N23 E69
	LOCKHEED	24	1625	N13 E70
	LOCKHEED	24	1630	N26 E71
	SAC PEAK	24	1734	N12 E82
	LOCKHFED	24	1735	N11 E80
	MCMATH	24	1735	N10 E85
	LOCKHFED	24	1736	N18 E23
	LOCKHEED	24	2012	N11 E85
	LOCKHEED	24	2033	N09 E80
	MCMATH	24	2052 E	N10 E90
	CLIMAX	24	2052	N12 E90
	SAC PEAK	24	2056	N11 E90
	LOCKHEED	24	2122	N11 E79
	LOCKHEED	24	2148	N20 E60
	LOCKHEED	24	2212	N09 E78
	LOCKHEED	24	2236	N12 E85
	LOCKHEED	24	2305	N12 E80
	LOCKHFED	24	2318	N15 E86
	LOCKHEED	25	0002	N23 E50
	LOCKHEED	25	0028	N12 E78
	HAWAII	25	0030 E	N12 E79
	LOCKHEED	25	0051	N18 E41
	LOCARNO	25	1012	N12 E88
	MCMATH	25	1210 E	N10 E85
	MCMATH	25	1246	N35 E80
	LOCKHEED	25	1514	N12 E70
	LOCARNO	25	1515 E	N13 E68
	LOCKHEED	25	1534	N25 E57
	LOCHEED	25	1719	N14 E71
	MCMATH	25	1725 E	N22 E53
	SAC PEAK	25	1726	N25 E55
	LOCKHEED	25	1727	N24 E52
	SAC PEAK	25	1731	N13 E72
	LOCKHEED	25	1732	S17 E45
	SAC PEAK	25	1734	S20 E46
	LOCKHEED	25	1735	N03 E68
	LOCKHEED	25	1806	N11 E82
	LOCKHEED	25	1812 E	N12 E76
	MCMATH	25	1822 E	N11 E68
	LOCKHEED	25	1843	N08 E72
	LOCKHEED	25	1902	N18 E45
	LOCKHEED	25	1943	N10 E80
	LOCKHEED	25	1910	N10 E78
	LOCKHEED	25	1948	N04 E85
	LOCKHEED	25	2024	N09 E85
	LOCKHFED	25	2054	N09 E70
	LOCHFED	25	2104	N10 E80
	LOCKHEED	25	2246	N12 E70
	LOCKHEED	25	2321	N10 E80
*	LOCKHEED	26	038	N25 E46
	ZUPICH	26	0816	N13 E58
	MCMATH	26	1056 E	S06 W25
	MCMATH	26	1326 E	S06 W25
	SAC PEAK	26	1401	N10 E74
	SAC PEAK	26	1510	N11 E60
	MCMATH	26	1513	N10 E60
	LOCKHEED	26	1529	N11 E63
	MCMATH	26	1610 E	S06 W25
	LOCKHEED	26	1617	N25 E46
	LOCKHEED	26	1630 E	N11 E62
	SAC PEAK	26	1637 E	N12 E62
	LOCKHEED	26	1705	N11 E55
	MCMATH	26	1709 E	N10 E56
	SAC PEAK	26	1710 E	N11 E55
	LOCKHEED	26	1738	N09 E62
	LOCKHEED	26	1811	N08 E73
	LOCKHEED	26	1820	N35 E58
	MCMATH	26	1821 E	N34 E60
	LOCKHEED	26	2006	N09 E70
	LOCKHEED	26	2120	N09 E70
	LOCKHEED	26	2155	N07 E56
	MCMATH	26	2155	N06 E58
*	LOCKHEED	27	0149	N27 E35
*	SIMEIZ	27	0725	N12 E51
*	ARCETRI	27	0835 E	N08 E58
*	LOCARNO	27	851	N08 E61
*	STOCKHOLM	27	1030	N20 E31
*	MCMATH	27	1102	N36 E50
	MCMATH	27	1135	N08 E55
	SAC PEAK	27	1324	S04 E90
	SAC PEAK	27	1412	N11 E47
*	SAC PEAK	27	1452	N11 E42
*	MCMATH	27	1454	N10 E42
	SAC PEAK	27	1458	N25 E21
*	HUANCAYO	27	1500 E	N10 E41
	LOCARNO	27	1504	N26 E27
	SAC PEAK	27	1602	N09 E56
*	MCMATH	27	1706	N23 E27
	LOCKHEED	27	1725	N15 E46
	LOCKHEED	27	1734	S15 W42
*	MCMATH	27	1740	N08 E47
*	LOCKHEED	27	1740	N10 E46
*	LOCKHEED	27	1803	N09 E46
	SAC PEAK	27	1812 E	N09 E47
	LOCKHEED	27	1815	N24 E23
	MCMATH	27	1817	N24 E24
	SAC PEAK	27	1848	N08 E46
	LOCKHEED	27	1905	N09 E45
	LOCKHEED	27	1927	N12 E43
	HUANCAYO	27	1930	N12 E41
*	MCMATH	27	2006	N25 E43
*	HAWAII	27	2012	N27 E41
	SAC PEAK	27	2024	N10 E55
*	SAC PEAK	27	2058	N27 E25
	LOCKHEED	27	2155	N08 E52
	LOCKHEED	27	2306	N12 E42
	LOCKHEED	28	0007	N11 E68
	HAWAII	28	0010	N14 E66
*	LOCKHEED	28	0026	N10 E41
*	HAWAII	28	0028	N11 E40
*	CAPRI G	28	0631	N11 E44
*	STOCKHOLM	28	0910	N31 E37
*	WENDEL	28	1217 E	N13 E32
*	MCMATH	28	1221 E	N13 E32
*	MCMATH	28	1240	N23 E14
*	WENDEL	28	1245 E	N23 E16
*	MCMATH	28	1250	N09 E36
	MCMATH	28	1255	N10 E61
	MCMATH	28	1340 E	N23 E14
	MCMATH	28	1342	N11 E61
	SAC PEAK	28	1344 E	N12 E60
	SAC PEAK	28	1456	N07 E35
	MCMATH	28	1505	N22 E51
	SAC PEAK	28	1508	N22 W50
	MCMATH	28	1508	N10 E60
	CAPRI G	28	1511 E	N21 W38
	SAC PEAK	28	1710	N12 E40
	SAC PEAK	28	1726 E	N24 E13
	LOCHEED	28	1740	N12 E39
	LOCKHEED	28	1811 E	N10 E48
	LOCKHEED	28	1826	N09 E48
	SAC PEAK	28	1854	N14 E32
	LOCKHEED	28	1855	N10 E28
	HAWAII	28	1856	N16 E32
	MCMATH	28	1946	N12 E38
	LOCKHEED	28	1947	N13 E37
	LOCKHEED	28	2001	N35 E38
	LOCKHEED	29	0031	N06 E68
	LOCKHEED	29	0040	N06 E28
	LOCKHEED	29	0041	N03 E55
	STOCKHOLM	29	0840 E	N19 E04
	CAPRI S	29	0915 E	N10 E22
	STOCKHOLM	29	0915	N09 E21
*	SAC PEAK	29	1438	N08 E28
	SAC PEAK	29	1604	N07 E23
	LOCKHEED	29	1623	N08 E28
	SAC PEAK	29	1624	N08 E27
	MCMATH	29	1715 E	N11 E20
	LOCKHEED	29	1718	N09 E21
	LOCKHEED	29	1729	N12 E23
	LOCKHEED	29	1815	S22 W05
	LOCKHEED	29	1828	N14 E19
	LOCKHEED	29	1950	N12 E19
	LOCKHEED	29	2008	N09 E23
	LOCKHEED	29	2347	S06 W72
	LOCKHEED	29	2354	N08 E52
	LOCKHEED	30	0116	N09 E20
	LOCKHEED	30	0145	N19 W70
	LOCKHEED	30	0148	N09 E11
*	CAPRI G	30	1114 E	N14 E33
	CAPRI G	30	1157 E	N13 E11
	MCMATH	30	1224 E	N11 E10
	SAC PEAK	30	1312	N12 E33
	SAC PEAK	30	1314	N20 W78
	SAC PEAK	30	1414	N12 E31
	SAC PEAK	30	1522	N32 W11
	CAPRI S	30	1530	N10 E09
	SAC PEAK	30	1530	N12 E07
	MCMATH	30	1545 E	N10 E80
	SAC PEAK	30	1556	N09 E54
	MCMATH	30	1638	N10 E30
	SAC PEAK	30	1648 E	N12 E31
	LOCKHEED	30	1705	N12 E10
	MCMATH	30	1706	N10 E08
	SAC PEAK	30	1710 E	N14 E07
	LOCKHEED	30	1746	N09 E11
	LOCKHEED	30	1827	N13 E06
	MCMATH	30	1830 E	N10 E10
	MCMATH	30	2026 E	N11 E06
	SAC PEAK	30	2132	N13 E1
	MCMATH	30	2133	N11 E10
	LOCKHEED	30	2133	N11 E12
	MCMATH	30	2147	N10 E08
	SAC PEAK	30	2150	N11 E03
	SAC PEAK	30	2214	N11 E03
	SAC PEAK	30	2234	N11 E 4
	LOCKHEED	30	2234	N12 E05
	LOCKHEED	31	0003	N12 E 8
	LOCKHEED	31	0036	N08 E11
	LOCKHEED	31	0113	N15 W05
	SIMEIZ	31	0613 E	N11 W03
	SIMEIZ	31	0622 E	N09 E15
	SIMEIZ	31	0721 E	N14 W07
	SIMEIZ	31	0727 E	N12 E 1
*	CAPRI S	31	0804 E	N12 E06
	MCMATH	31	1111 E	N10 E 4
*	MCMATH	31	1455	N15 W12
*	LOCKHEED	31	1459	N14 W12
	MCMATH	31	1510	N08 W55
*	LOCARNO	31	1505	N13 W22
	LOCKHEED	31	1540	N14 E12
*	LOCARNO	31	1556	N13 W11
*	MCMATH	31	1556	N13 W12
*	HUANCAYO	31	1559	N12 W11
	LOCKHEED	31	1611	N10 W00
	LOCARNO	31	1615	N10 W00
	LOCKHEED	31	1629	N14 W13
*	SAC PEAK	31	1648 E	S13 E45
*	MCMATH	31	1651	S14 E45
*	SAC PEAK	31	1724	N13 E12
*	MCMATH	31	1725	N08 E10
	LOCKHEED	31	1953	N15 W12
	MCMATH	31	2042	N16 E80
	LOCKHEED	31	2117	N17 E85
	MCMATH	31	2149 E	N26 E85
	MCMATH	31	2240	N09 W60

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SYDNEY	01	0231	0251	0237	N10	W39	5117	20	1	2	0237	2.00	2.50			
KRASNYA	01	0735 E	0829 D	0748 U	N17	E07	5122	54 D	2	2	0748		5.40		83	Slow S-SWF
MEUDON	01	0812 E	0835		N20	E10	5122	23 D	1&				10.00			
VOROSHILOV	01	2153	2154	2153	N25	W80	5110	1	1	1	2153		3.64		64	
LOCKHEED	02	2355	0042	0013	N16	W50	5117	47	1	1		2.30				
TASHKENT	03	0323 E	0353	0324	N15	W51	5120	30 D	2	2	0324		3.00	5.40	145	S-SWF
ONDREJOV	03	0453 E	0512		N15	W51	5120	19 D	1	1	0455			2.50		
ABASTUMANI	03	0630 E	0740 D	0708 U	N17	W54	5120	70 D	1	2	0709		2.00	1.60	115	
ONDREJOV	03	0637	0651		S09	W22	5124	14	1	2	0640			2.10		
ONDREJOV	03	0658	0707	0700	N15	W52	5120	9	1	3	0700			3.20		
SIMEIZ	03	0701 E	0742 D	0707	N16	W55	5120	41 D	1	1	0701		2.00	2.00	124	
ABASTUMANI	03	0759 E	0828 D	0803 U	S06	W25	5124	29 D	1	2	0803		4.80	1.80	96	Slow S-SWF
SIMEIZ	03	0803 E	0850 D	0806	S07	W24	5124	47 D	1&	1	0804		4.50	2.90	120	
KRASNYA	03	0800	0801	0800	N15	E85	5147	1	1	2	0800		4.50		58	
ABASTUMANI	03	0904 E	0930 D	0907 U	N18	W19	5122	26 D	1	2	0907		3.90	2.20	110	
MEUDON	03	0913 E	0954		N20	W20	5122	41 D	1				4.00			
ONDREJOV	03	1500 E	1507		N15	W55	5120	7 D	1	3	1500			3.10		
TASHKENT	04	0347	0515	0402	N11	W70	5120	88	1&	2	0402		20.00	5.30	90	S-SWF
ONDREJOV	04	0652	0716	0656	N14	W63	5120	24	1	3	0656			2.60		
ARCETRI	04	0822 E	0832 D		N09	W80	5120	10 D	1	2						
ARCETRI	04	0859 E			N09	W80	5120		1	3	0859	.82	4.70			
ONDREJOV	04	1403	1410		N14	W74	5120	7	1	3	1406			2.10		
ONDREJOV	04	1412 E	1427		N19	W40	5122	15 D	1	3	1414			2.60		
ONDREJOV	04	1418 E	1425		N19	W66	5120	7 D	1	3	1419			3.10		
SYDNEY	04	2320 E	2332	2323	N24	E90	5147	12 D	□	2	2323	1.00				
SYDNEY	04	2331	2349	2337	N16	W83	5120	18	□	2	2337	4.00				Slow S-SWF
VOROSHILOV	04	2332	2343	2337	N19	W83	5120	11	1&	2	2337		4.45		140	
SYDNEY	04	2343	0040	2349	N24	E90	5147	57	□	2	2349	.75				
VOROSHILOV	05	0020	0024	0023	N18	W74	5120	4	1	2	0023		2.84		71	
SYDNEY	05	0042	0046	0043	N15	E90	5147	4	□	2	0043	.50				
LOCKHEED	05	0048	0130	0112	N23	E90	5147	42	1	2		2.10				
SYDNEY	05	0053	0125	0103	N27	E89	5147	32	□	2	0103	.75				
SYDNEY	05	0111	0120	0114	N27	E89	5147	9	□	2	0114					
SYDNEY	05	0133	0147	0139	N16	W84	5120	14	□	2	0139	3.00				
SYDNEY	05	0152	0206	0157	N07	W89	5120	14	□	2	0157	.50				
SYDNEY	05	0238	0241	0239	N27	E89	5147	3	□	2	0239					
SYDNEY	05	0312	0320	0313	N07	W90	5120	8	□	2	0313	.50				
SYDNEY	05	0346	0429 D	0404	N24	E88	5147	43 D	□	2	0404	.75				
SYDNEY	05	0350	0413	0355	N27	E88	5147	23	□	2	0355	1.00				
SYDNEY	05	0442	0508	0450	S05	W90	5124	26	□	2	0450	.50				
SYDNEY	05	0455	0505	0458	N16	W85	5120	10	□	2	0458	2.00				
SYDNEY	05	0459	0508	0505	N18	W51	5122	9	1	2	0505	1.50	3.00			
KRASNYA	05	0703 E	0725 D	0715 U	N19	W90	5120	22 D	1	1	0715		3.00		76	S-SWF
ARCETRI	05	0818 E	0839 D		N15	W86	5120	21 D	1	3	0839	.20	2.90			
ARCETRI	05	0827 E	0842 D		N25	E90	5147	15 D	1&	3	0827	.56				
MEUDON	05	0902	0929		N17	W90	5120	27	1							
ARCETRI	05	0905 E	0912 D		N15	W86	5120	7 D	1&	3						Slow S-SWF
ARCETRI	05	0907 E	0912 D		N25	E90	5147	5 D	1	3						
ARCETRI	05	0907 E	0916 D		N17	W86	5120	9 D	2&	3	0907	1.35	19.35			

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OBSERVATORY	DATE MAY 1959	OBSERVED UNIVERSAL TIME START	END	MAX. PHASE	LOCATION APPROX. LAT.	MER. DIST.	McMATH PLAGE REGION	DURATION — MINUTES	IMPORTANCE	OBS. COND.	MEASUREMENTS TIME — U T	MEAS. AREA Sq. Deg.	CORR. AREA Sq. Deg.	MAX. WIDTH Ha	MAX. INT. %	PROVISIONAL IONOSPHERIC EFFECT
ARCETRI	05	0909 E	0914 D		N15	W48	5122	5 D	1	3	0909	1.70	2.60			
GOOD HOPE	05	1008	1052	1018	N16	W85	5120	44	1		1018	.90				
MEUDON	05	1014	1052		N17	W90	5120	38	1							
ARCETRI	05	1048 E	1142 D		S05	W55	5124	54 D	1	3						
GOOD HOPE	05	1235	1317 D	1237	N24	E90	5147	42 D	1&		1237	1.10				S-SWF
KIEV	05	1235	1324	1238	N23	E90	5147	49	1&	3	1237				81	
GOOD HOPE	05	1305	1317 D	1307	N16	W85	5120	12 D	1		1307	1.00				
VOROSHILOV	05	2227	2237	2228	N25	E85	5147	10	1	2	2228		4.24		72	
VOROSHILOV	05	2352	0003	2353	N24	E80	5147	11	2	2	2353		6.02		100	
VOROSHILOV	06	0008	0014	0009	N24	E80	5147	6	2	2	0009		5.30		89	S-SWF
VOROSHILOV	06	0023	0044	0026	S16	E51	5133	21	1&	2	0026		3.44		80	S-SWF
VOROSHILOV	06	0052	0112	0104	N24	E85	5148	20	2	1	0104		5.28		97	
VOROSHILOV	06	0142	0200 D	0150	N26	E90	5147	18 D	1&	1	0150				110	
TASHKENT	06	0350	0402	0357	N26	E79	5147	12	1&	3	0359		10.00	4.40	95	
TASHKENT	06	0440	0558	0444	N26	E79	5147	78	1&	3	0445		6.00	5.00	145	S-SWF
ONDREJOV	06	0444	0458		N23	E72	5147	14	1&	3	0447			5.70		
TASHKENT	06	0521	0539	0533	N26	E78	5147	18	1&	3	0533		8.00	4.30	85	
SIMEIZ	06	0651 E	0658 D	0652	N24	E72	5147	7 D	1	2	0652		4.00		68	
SIMEIZ	06	0656	0725	0701	S08	W66	5124	29	1	2	0701		2.00		92	
ONDREJOV	06	0700	0711	0701	N23	E71	5147	11	1	3	0701			2.50		
SIMEIZ	06	0725 E	0735 D	0730	N24	E72	5147	10 D	1	2	0729		5.00	3.90	112	
KRASNYA	06	0726	0730 D	0729 U	N24	E72	5147	4 D	1&		0729		3.00		84	
ONDREJOV	06	0729 E	0740		N23	E70	5147	11 D	1&	3	0729			4.30		
ARCETRI	06	0822 E	0922 D		N23	E73	5147	60 D	1&	3						
SCHAUINS	06	0905 E	1020 D		N24	E68	5147	75 D	1&	2			5.00	3.90		
KRASNYA	06	0906	0921 D	0915 U	N24	E72	5147	15 D	1	2	0915		2.50		69	
ONDREJOV	06	0907	0925	0911	N23	E69	5147	18	1&	3	0911			5.10		S-SWF
MOSCOW G	06	0907 E	1010 D	0916	N26	E75	5147	63 D	2	1	0916		10.40	5.10	170	
NEDERHORST	06	1011	1016 D		N23	E69	5147	5 D	2	3						
MOSCOW G	06	1026 E	1100 D		N30	E70	5147	34 D	1&	1	1033		8.90	2.00	120	
SCHAUINS	06	1030 E			N27	E75	5147		1	1			4.00	2.00		
NEDERHORST	06	1327 E	1335 D		N23	E66	5147	8 D	2	2						S-SWF
ONDREJOV	06	1328	1339		N23	E67	5147	11	2	2	1331			7.50		
UCCLE	06	1343 E			N27	E80	5147		1&	2						
UCCLE	06	1559			N27	E87	5147		1&	4						
SCHAUINS	06	1710 E	1732 D		S16	E40	5133	22 D	1&	1			5.00	3.30		S-SWF
VOROSHILOV	06	2139	2149	2140	N34	E84	5147	10	1	3	2140		3.08		60	
ONDREJOV	07	1039 E	1044		S15	E30	5133	5 D	1&	3	1040			2.40		
ARCETRI	07	1115 E			N25	E57	5147		1	3						
ONDREJOV	07	1119	1125		N24	E55	5147	6	1&	3	1121			3.50		
ONDREJOV	07	1327	1330	1328	N24	E54	5147	3	1	3	1328			2.60		
VOROSHILOV	07	2342	2359	2357	N23	E90	5148	17	1	2	2357				60	
VOROSHILOV	08	0027	0050	0035	N22	E90	5148	23	1	2	0035				74	
SYDNEY	08	0115 E	0135	0122	N23	E90	5148	20 D	□	2	0122	1.00				
SYDNEY	08	0115 E	0135	0122	N16	E88	5148	20 D	□	2	0122	1.00				
SYDNEY	08	0141	0214	0159	N24	E77	5148	33	□	2	0159	1.00				
SYDNEY	08	0210	0216 D	0215	N20	E86	5148	6 D	□	2	0215	1.00				
SYDNEY	08	0226 E	0238	0228	N12	E62	5148	12 D	□	2	0228	1.50				
SYDNEY	08	0226 E	0240	0229	N24	E77	5148	14 D	□	2	0226	.50				
SYDNEY	08	0226 E	0246	0235	N18	E86	5148	20 D	□	2	0235	1.50				

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SYDNEY	08	0338	0456	0405	N17	E31	5146	78	2	2	0405	6.00	7.00			
KIEV	08	1147 E	1202 D	1147 U	S15	E16	5133	15 D	1	1	1147		1.31		70	
NEDERHORST	08	1423	1435 D		N18	E86	5148	12 D	2	2						
ONDREJOV	08	1427 E	1459 D		N19	E73	5148	32 D	1&	3	1427			2.90		Slow S-SWF
ARCETRI	08	1437 E	1440 D		N19	E80	5148	3 D	1	3						
VOROSHILOV	08	2223	2229	2225	N14	E85	5148	6	1&	2	2225		2.47		98	
VOROSHILOV	08	2253	2309	2256	N22	E85	5148	16	3	2	2256		13.60		208	S-SWF
VOROSHILOV	08	2312	2346	2336	N20	E80	5148	34	2	2	2336		7.51		100	
VOROSHILOV	08	2322	0000	2327	S14	E05	5133	38	1&	2	2327		2.73		80	
SYDNEY	09	0013	0024	0020	N19	E73	5148	11	□	2	0020	3.00				
SYDNEY	09	0027	0047	0038	N19	E73	5148	20	□	2	0038	4.00				
VOROSHILOV	09	0029	0041	0032	N20	E80	5148	12	2	2	0032		10.41		100	
SYDNEY	09	0047	0123	0054	N25	E68	5148	36	□	2	0054	2.00				
VOROSHILOV	09	0056	0118	0107	N23	E68	5148	22	2	2	0107		6.83		90	
SYDNEY	09	0123	0212 D	0150	N20	E78	5148	49 D	3	2	0150					
ONDREJOV	09	0619	0623		N14	E67	5148	4	1	3	0620			2.80		
SCHAUINS	09	0715 E	0806 D		N06	W64	5126	51 D	1&	2			3.00	3.20		
NEDERHORST	09	0813	0820 D		N20	E78	5148	7 D	1	2						
SCHAUINS	09	0830 E	0845 D		N15	E74	5148	15 D	1	2			5.00	2.20		
SCHAUINS	09	0834	0845 D		S19	E21	5144	11 D	1	2			2.00	1.90		
MEUDON	09	1145	1209 D		N20	E70	5148	24 D	1							
KIEV	09	1147	1209	1154	N23	E76	5148	22	1	1	1153		5.10		48	S-SWF
ONDREJOV	09	1148 E	1207		N20	E70	5148	19 D	1	3	1150			3.50		
SCHAUINS	09	1150 E	1203 D		N20	E69	5148	13 D	1&	2			3.00	2.80		
ONDREJOV	09	1228	1240	1231	N14	E72	5148	12	1	3	1231			3.50		
ONDREJOV	09	1439	1449		N17	E24	5146	10	1	3	1444			2.20		
LOCKHEED	09	2216	2224	2218	N22	E69	5148	8	1	1		2.10				
VOROSHILOV	10	0031	0037	0035	N21	E66	5148	6	1&	3	0035		2.49		87	
ARCETRI	10	0825 E	0837 D		N11	E60	5148	12 D	1	3						
KRASNYA	10	0827	0832	0829	N10	E62	5148	5	1&	1	0829		2.30		156	
SCHAUINS	10	0836 E	0914 D		N11	E60	5148	38 D	1&	2			4.00	2.70		
ARCETRI	10	0902 E	0920 D		N22	E63	5148	18 D	1	2						
ONDREJOV	10	0904	0910	0906	N21	E62	5148	6	1	3	0906			5.10		
MOSCOW G	10	0905 E	0908		N23	E65	5148	3 D	1	2	0906		2.80	2.70	80	
ONDREJOV	10	0939 E	0952		S12	W10	5133	13 D	1	3	0940			2.40		
ONDREJOV	10	1008 E	1020		N11	E01	5146	12 D	1	3	1009			2.50		
SCHAUINS	10	1046	1058		N22	E67	5148	12	1&	2			2.00	2.80		
MOSCOW G	10	1047 E	1056 D		N23	E63	5148	9 D	1	2	1051		2.70	3.00	90	
ONDREJOV	10	1048 E	1100		N21	E60	5148	12 D	1	2	1052			3.50		
ONDREJOV	10	1055 E	1108		S19	E11	5144	13 D	1	2	1055			2.40		
ONDREJOV	10	1256	1302		N16	E50	5148	6	1	3	1257			2.80		
ONDREJOV	10	1303 E	1310		N13	W01	5146	7 D	1	3	1306			2.50		
ONDREJOV	10	1415 E	1445		N32	E33	5147	30 D	1&	3	1420			3.40		
ONDREJOV	10	1443 E	1446		N13	W03	5146	3 D	1	3	1445			2.50		
ONDREJOV	10	1659 E	1708		S13	W23	5133	9 D	1	3	1701			2.90		
LOCKHEED	10	2020	2043	2027	N20	E51	5148	23	1	3		2.50				G-SWF
LOCKHEED	10	2055	2204 D	2140	N23	E47	5148	69 D	3&	3		45.00				
CLIMAX	10	2130 E	2300 D		N22	E44	5148	90 D	3		2134	15.00				Slow S-SWF
SYDNEY	10	2318 E	0120 D		N20	E49	5148	122 D	3	2	2318	14.00	24.00			Slow S-SWF
SIMEIZ	11	0733 E	0745 D	0737	N22	E46	5148	12 D	1	1	0727		1.90	1.40	72	

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ONDREJOV	11	0900 E	0916		N27	E17	5147	16 D	1	3	0901			2.20		
ONDREJOV	11	1455	1500		N18	E42	5148	5	1	3	1458			2.10		
ONDREJOV	11	1519	1526		N16	E39	5148	7	1&	3	1520			2.70		
ONDREJOV	11	1534 E	1541		S13	W31	5133	7 D	1	3	1534			2.10		
ONDREJOV	11	1653 E	1700		N10	E43	5148	7 D	1	3	1655			2.10		
LOCKHEED	11	2006	2130	2022	N10	E42	5148	38	2&	2		7.00				S-SWF
CLIMAX	11	2037 E	2057 D		N14	E40	5148	20 D	2		2040	11.50				
SYDNEY	12	0412	0455 D	0431	N22	E39	5148	43 D	1	1	0431	3.00	5.00			
ONDREJOV	12	0703	0801	0707	N10	W21	5146	58	2	3	0707			3.60		S-SWF
ONDREJOV	12	0740 E	0748		N20	E20	5148	8 D	1	3	0741			2.80		
ONDREJOV	12	0749 E	0806		N29	W11	5147	17 D	1	3	0750			2.40		
SCHAUINS	12	0809 E	0836		N10	W23	5146	27 D	2	2			7.00	2.60		
ONDREJOV	12	0845	0905		S16	W33	5133	20	1	3	0856			2.30		
ARCETRI	12	0853 E	0900 D		S17	W20	5144	7 D	1	3						
ONDREJOV	12	0911 E	0919		N11	W23	5146	8 D	1	3	0914			2.00		
ONDREJOV	12	0939	0952	0946	N08	E34	5148	13	1	3	0946			2.40		
KHARKOV	12	0941 E	0958	0945	N07	E34	5148	17 K	1	2	0945		2.80	2.20		
GOOD HOPE	12	1009	1045 D	1012	S16	W16	5144	36 D	1		1012	2.30	2.50			
MEUDON	12	1009	1100	1020	S18	W17	5144	51	1&				8.00			
KHARKOV	12	1010	1056	1022	S17	W17	5144	46	1&	2	1022		6.30	2.40		S-SWF
ARCETRI	12	1012 E			S17	W20	5144		1	3	1012	2.00	2.12			
ONDREJOV	12	1013 E	1047	1014	S16	W20	5144	34 D	2	3	1014			3.50		
SCHAUINS	12	1027 E	1031 D		S18	W15	5144	4 D	1	1			4.00	2.40		
ARCETRI	12	1044 E	1049 D		S17	W20	5144	5 D	1	2						
ONDREJOV	12	1255	1305 D		N09	E33	5148	10 D	1	3	1257			2.30		
ONDREJOV	12	1412	1437		N08	E32	5148	25	1&	2	1423			3.00		Slow S-SWF
UCCLE	12	1422 E	1425		N08	E31	5148	3 D	1	4						
ONDREJOV	12	1435 E	1447		S17	W34	5133	12 D	1	2	1437			2.70		
UCCLE	12	1450	1456		N10	W30	5146	6	1	4						
ONDREJOV	13	0448	0459	0451	S13	W48	5133	11	1&	3	0451			3.10		
TASHKENT	13	0448	0505	0452	S15	W48	5133	17	1	3	0452		3.00	3.20	85	
TASHKENT	13	0457	0553	0513	N22	E24	5148	56	2&	3	0513		10.00	4.70	210	
ONDREJOV	13	0459 E	0508		N20	E21	5148	9 D	1	3	0500			2.90		
ABASTUMANI	13	0503 E	0511 D	0503 U	N20	E22	5148	8 D	1	2	0505		2.00	2.00	63	S-SWF
ONDREJOV	13	0509	0542	0515	N21	E24	5148	33	2&	3	0515			4.90		
ABASTUMANI	13	0509	0551 D	0513	N22	E25	5148	42 D	2	2	0513		12.20	4.00	110	
KODAIKNL	13	0515 E			N20	E27	5148		2	1						
ABASTUMANI	13	0637 E	0649 D	0638 U	S19	W24	5144	12 D	1	2	0641		3.80	2.30	73	Slow S-SWF
ABASTUMANI	13	0639	0732 D	0710	N07	E21	5148	53 D	1&	2	0710		9.00	2.50	103	
ONDREJOV	13	0642	0730	0706	N06	E24	5148	48	2	3	0706			3.50		
SCHAUINS	13	0643	0728		N09	E21	5148	45	1&	2			4.00	3.10		Slow S-SWF
ONDREJOV	13	0654 E	0703		N20	E23	5148	9 D	1	3	0655			2.60		
MOSCOW G	13	0702 E	0742 D		N09	E23	5148	40 D	1	1	0706		2.90	3.00	140	
ABASTUMANI	13	0739 E	0758 D	0758 U	N28	W16	5147	19 D	1	2			8.00			
MEUDON	13	0750 E	0805		N28	W12	5147	15 D	1				3.00			
KRASNYA	13	0835 E	0840 D	0837 U	S17	W28	5144	5 D	1	1	0837		2.60		57	
MEUDON	13	0855	1042		S10	E90	5156	107	2							
KHARKOV	13	0858	1256	0925	S13	E90	5156	238	3	2	0925		37.60	5.70		
KRASNYA	13	0859 E	0949	0926 U	S11	E90	5156	50 D	1&	1	0926		9.00		53	
ARCETRI	13	0859 E	0951 D		S04	E90	5156	52 D	1&	3						
UCCLE	13	1537	1655	1557	S19	W47	5143	78	2	4						G-SWF

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MEUDON	13	1538	1635 D		S15	W45	5143	57 D	1&				8.00			
UCCLE	13	1557	1645	1610	N14	E16	5148	48	3	4						
MEUDON	13	1600	1635	1613	N14	E20	5148	35	2				12.00			
MEUDON	13	1618	1635 D		S10	E90	5156	17 D	1							
UCCLE	13	1635	1655		S12	W57	5133	20	1&	4						
TASHKENT	14	0549	0559	0553	N12	E06	5148	10	1	3	0552		6.00	2.10	60	
SIMEIZ	14	0652 E	0659 D		S13	W66	5133	7 D	1	1	0659		2.70		72	
ARCETRI	14	0812 E	0843 D		S12	W64	5133	31 D	1&	2	0838	1.30	3.00			
SIMEIZ	14	0825 E	0829 D	0829	S13	W66	5133	4 D	1	1	0829		2.70		92	
KRASNYA	14	0827	0846	0833	S12	W64	5133	19	1	2	0833		2.20		78	
MEUDON	14	0830	0845		S15	W65	5133	15	1				2.00			
MOSCOW G	14	0832 E	0844 D		S12	W63	5133	12 D	1&	1	0833		9.10	2.20	100	
ARCETRI	14	0840 E	0859 D		N13	E14	5148	19 D	1	2						
KRASNYA	14	0902	0916 D	U	S12	W64	5133	14 D	1	2	0915		1.30		89	
ARCETRI	14	0939 E	1010 D		S15	W38	5145	31 D	1	2						
ARCETRI	14	1503 E			S12	W65	5133		1	3						
UCCLE	14	1540	1603		S15	W70	5133	23	1	4						
UCCLE	14	1625	1639		S15	W70	5133	14	1	4						
VOROSHILOV	14	2129 E	2139		S13	W70	5133	10 D	1	2	2132		3.02		70	
VOROSHILOV	14	2155	2213	2202	S14	W71	5133	18	1	2	2202		2.26		67	
VOROSHILOV	14	2308	0027	2346	S13	W72	5133	79	1	2	2346		3.39		77	
SYDNEY	15	0120	0201	0153	S14	W75	5133	41	1	2	0153	.75	2.00			
SYDNEY	15	0153	0209 D	0159	S17	W53	5144	16	1	2	0159	1.50	2.00			
GOOD HOPE	15	0648	0700	0652	S09	E69	5156	12	1		0652	1.50	4.40			
SIMEIZ	15	0655 E	0705 D		S09	E71	5156	10 D	1	1	0655		3.50		80	
ARCETRI	15	0810 E	1002 D		S11	W78	5133	112 D	1	3	0839	.43	2.07			
GOOD HOPE	15	0827	0922	0834	S13	W79	5133	55	1		0834	.50				
ONDREJOV	15	0836	0846	0838	S14	W75	5133	10	1	3	0838			2.30		
ARCETRI	15	0840 E	0850 D		N29	W39	5147	10 D	1	3	0839	1.40	2.10			
KIEV	15	1347 E	1402 D	1354 U	N13			15 D	1	2	1354				75	
ONDREJOV	15	1515	1524 D	1518	S14	W78	5133	9 D	1	3	1518			2.60		
ABASTUMANI	16	0650 E	0708 D	0654	N21	W05	5148	18 D	1	1			5.10			
GOOD HOPE	16	0650	0735	0659	N24	W02	5148	45	1&		0659	4.50	5.00			Slow S-SWF
KRASNYA	16	0651	0737	0653	N22	W03	5148	46	1		0653		2.10		70	
KRASNYA	16	0708	0748	0715	N29	W48	5147	40	1&		0715		3.00		80	Slow S-SWF
GOOD HOPE	16	0708	0815	0716	N30	W52	5147	67	2		0716	3.20	6.20			
ARCETRI	16	0836 E	0847 D		S12	W90	5133	11 D	1	3						
GOOD HOPE	16	0854	0925	0912	N24	W04	5148	31	1		0912	2.90	3.20			
ARCETRI	16	0859 E	0909 D		N22	W05	5148	10 D	1	3						
GOOD HOPE	16	0919	0955	0922	S08	E49	5156	36	2		0922	3.70	5.80			
KHARKOV	16	0925 E	0948 D		S10	E55	5156	23 D	2	2	0926		13.70	2.00		
ARCETRI	16	0940 E	0942 D		S10	E51	5156	2 D	1	3						
MOSCOW G	16	0942 E	0945		S08	E45	5156		□	1						
GOOD HOPE	16	0943	1027	0955	N23	W04	5148	44	1		0955	2.00	2.20			
SYDNEY	17	0102	0118	0104	N20	E82	5158	16	□	2	0104	.75				S-SWF
TASHKENT	17	0359	0423	0401	N22	W28	5148	24	1&	2	0402		2.00	4.10	115	
SYDNEY	17	0402 E	0406 D		N25	W26	5148	4 D	1	1	0403	2.00	3.00			
TASHKENT	17	0523	0600	0527	N20	W31	5148	37	3	2	0528		4.00	10.50	240	S-SWF
ONDREJOV	17	0540 E	0542		N21	W29	5148	2 D	2	3	0540			2.20		

SOLAR FLARES

MAY 1959

OBSERVATORY	DATE MAY 1959	OBSERVED UNIVERSAL TIME START	END	MAX. PHASE	LOCATION APPROX. LAT.	MER. DIST.	McMATH PLAGE REGION	DURATION — MINUTES	IMPORTANCE	OBS. COND.	MEASUREMENTS TIME — U T	MEAS. AREA Sq. Deg.	CORR. AREA Sq. Deg.	MAX. WIDTH Ha	MAX. INT. %	PROVISIONAL IONOSPHERIC EFFECT
ABASTUMANI	17	0700	0722	0707	N20	W31	5148	22	□	1			3.50			
ONDREJOV	17	0706 E	0722	0708	N22	W30	5148	16 D	2	3	0708			7.30		S-SWF
GOOD HOPE	17	0708 E	0722		N22	W30	5148	14 D	1		0708	2.60	3.30			
ONDREJOV	17	0732	0745		N10	E10	5154	13	1	3	0735			2.70		
SCHAUINS	17	0809 E	0814 D		N16	W29	5148	5 D	1&	2				4.50		
GOOD HOPE	17	1141	1212	1145	N21	W21	5157	31	1		1145	2.40	2.80			
ONDREJOV	18	0530 E	0555		N17	E40	5157	25 D	1	3	0533			2.30		
ARCETRI	18	0918 E	0927 D		N17	E34	5157	9 D	1	2						
ONDREJOV	18	0918	0934 D	0919	N17	E36	5157	16 D	1	3	0919			2.50		
GOOD HOPE	18	0935	0951	0938	N20	E60	5158	16	1		0938	1.00	2.30			
KRASNYA	18	0937 E	0946 D		N20	E60	5158	9 D	1		0937		3.80		71	
ARCETRI	18	1558 E	1603 D		N23	W57	5148	5 D	1	2						Slow S-SWF
SIMEIZ	19	0600 E	0610 D		N19	E52	5158	10 D	1	1	0600		3.00	1.70	116	
SIMEIZ	19	0620 E	0720 D	0635	N25	W53	5148	60 D	1&	1	0626		7.30	1.80	116	
ONDREJOV	19	0621	0650		N21	W53	5148	29	1&	3	0624			2.30		
KRASNYA	19	0701	0727	0703	N28	W40	5148	26	1		0703		1.80		80	
SIMEIZ	19	0740 E	0810 D	0744	N11	W22	5154	30 D	1	1	0744		2.00	1.60	104	
ONDREJOV	19	0743 E	0755		N10	W20	5154	12 D	1	3	0749			1.80		
SIMEIZ	19	0800 E	0815 D	0803	N19	W62	5148	15 D	1	1	0803		4.80		80	
ONDREJOV	19	0803 E	0810		N14	W60	5148	7 D	1	3	0803			2.80		
SIMEIZ	19	0809 E	0820 D	0809	N17	E23	5157	11 D	1	1	0809		2.00		88	
SIMEIZ	20	0628 E	0736 D	0636	N28	E39	5158	68 D	1	2	0632		3.10	1.90	72	
ARCETRI	20	0749 E	0752 D		S25	W90	5162	3 D	1	3						
ARCETRI	20	0821 E	0930 D		S25	W90	5162	69 D	1	3						
ARCETRI	20	0844 E	0855 D		S25	W90	5162	11 D	1	3	0848	.40				
KRASNYA	20	0909	0929	0912	N22	W28	5155	20	1&		0912		4.30		96	
ARCETRI	20	0913 E	0930 D		N23	W30	5155	17 D	1	3						
ONDREJOV	20	1313	1320	1315	N12	W80	5148	7	1	3	1315			2.30		
SCHAUINS	21	0608 E	0615 D		N16	W03	5157	7 D	1	2			3.00			
GOOD HOPE	21	0822	0905 D	0837	N28	E23	5158	43 D	1		0837	2.60	3.30			
ARCETRI	21	0828 E	0915 D		N30	E22	5158	47 D	1	3	0839	2.50	3.20			
ONDREJOV	21	0845 E	0855 D		N17	E13	5158	10 D	1&	3	0846			2.50		
KRASNYA	21	0927	0957		N08	W90	5148	30	2		0934		18.00		48	
SCHAUINS	22	0529 E	0536 D		S16	E63	5167	7 D	1	2			2.00	2.50		
SCHAUINS	22	0837 E	0838 D		S16	E62	5167	1 D	1	1			3.00			
UCCLE	22	1131	1142		S17	E60	5167	11	1	4						
GOOD HOPE	22	1133	1144	1136	S15	E61	5167	11	1		1136	1.20	2.60			
ONDREJOV	22	1328	1335	1330	S17	E57	5167	7	1	3	1330			3.90		
VOROSHILOV	23	0029	0102	0035	N14	E45	5165	33	1&	1	0035		3.73		81	
SYDNEY	23	0037 E	0113		N14	E41	5165	36 D	1	2	0037	2.00	3.00			
VOROSHILOV	23	0056	0059	0057	N18	W28	5157	3	1&	1	0057		3.81		80	
SYDNEY	23	0139	0229	0150	N25	W07	5158	50	2	2	0150	6.00	7.00			
VOROSHILOV	23	0143	0216	0155	N26	W03	5158	33	2	1	0155		7.56		89	
ONDREJOV	23	0849 E	0902		N25	W34	5157	13 D	1&	3	0850			5.00		
ONDREJOV	23	1252 E	1302		N15	E39	5165	10 D	1	3	1253			3.10		
ONDREJOV	23	1455 E	1503		N15	E38	5165	8 D	1	3	1456			2.30		
ONDREJOV	23	1617 E	1630		N18	E70	5170	13 D	1	3	1618			4.20		

SOLAR FLARES

MAY 1959

OBSERVATORY	DATE MAY 1959	OBSERVED UNIVERSAL TIME START	OBSERVED UNIVERSAL TIME END	OBSERVED UNIVERSAL TIME MAX. PHASE	LOCATION APPROX. LAT.	LOCATION APPROX. MER. DIST.	LOCATION McMATH PLAGE REGION	DURATION — MINUTES	IMPORTANCE	OBS. COND.	MEASUREMENTS TIME — U T	MEAS. AREA Sq. Deg.	CORR. AREA Sq. Deg.	MAX. WIDTH Hα	MAX. INT. %	PROVISIONAL IONOSPHERIC EFFECT
VOROSHILOV	23	2314 E	2316 D		N24	W57	5157	2 D	1	2	2315		4.08		62	
ONDREJOV	24	0656	0710		S10	E53	5167	14	1	3	0659			2.00		
ONDREJOV	24	1059	1109	1100	N24	W48	5157	10	1	3	1100			2.10		
ONDREJOV	24	1153	1209	1155	N26	W18	5158	16	1&	3	1155			2.80		
VOROSHILOV	25	0059	0110	0102	N24	W56	5157	11	1	2	0102		2.72		63	
ONDREJOV	25	0531 E	0538		S18	E24	5167	7 D	1	3	0533			2.40		
ARCETRI	25	0848 E	0852 D		N15	W50	5157	4 D	1	2						
UCCLE	25	1106			S15	E17	5167		1	1						
ONDREJOV	25	1214 E	1228 D		N22	W36	5158	14 D	1	3	1222			2.50		
ONDREJOV	25	1503	1516	1505	N20	W60	5157	13	1	3	1505			2.50		
OTTAWA	25	1532 E	1631 D		N02	E09	5166	59 D	2	3	1556	5.68	5.80			
MCMATH	25	1534	1711 D	1555	N02	E07	5166	97 D	1&	1	1555		3.10			
MEUDON	25	1535	1620	1552	N05	E15	5166	45	1&				8.00			
ONDREJOV	25	1537 E	1612		N02	E07	5166	35 D	1	3	1537			2.30		
SCHAUINS	25	1538 E	1630		N02	E17	5166	52 D	2							
SYDNEY	26	0004	0023 D	0006	N18	W55	5158	19 D	1	2	0006	1.50	3.00			
VOROSHILOV	26	0005 E	0013		N22	W60	5157	8 D	1	2	0006		2.26		70	
ONDREJOV	26	0819	0846	0824	S16	E09	5167	27	1&	3	0824			2.50		
MEUDON	26	1456	1515		S18	E02	5167	19	1				3.00			
SYDNEY	26	2348	0020	2352	N01	W13	5166	32	2	2	2352	12.00	12.00			S-SWF
SYDNEY	27	0010	0021	0013	N14	W79	5157	11	□	2	0013	1.00				
SYDNEY	27	0148	0206	0153	N21	W83	5157	18	□	2	0153					
SYDNEY	27	0210	0219 D	0214	N23	W79	5157	9 D	□	2	0214					
SYDNEY	27	0300	0310	0304	N23	W80	5157	10	□	2	0304					
SYDNEY	27	0334	0347	0340	N14	W80	5157	13	□	2	0340					
TASHKENT	27	0334	0358	0337	N13	W88	5157	24	1&	2	0337		9.00	5.30	90	
ARCETRI	27	0825 E	0908 D		N15	W90	5157	43 D	1	3						
ARCETRI	27	0825 E	0908 D		N25	W90	5157	43 D	1	3						
SIMEIZ	27	0856 E	0901 D		N15	W90	5157	5 D	1	1	0901		5.00		52	
ONDREJOV	27	1345	1359	1350	S15	W08	5167	14	1&	3	1350			2.40		
ONDREJOV	27	1429	1436 D		N16	W82	5157	7 D	1	3	1432			3.00		
SYDNEY	27	2358	0004	2359	N14	W89	5157	6	□	2	2359	.50				
LOCKHEED	28	0216	0226	0220	S17	W08	5167	10 D	1	1		2.20				
ONDREJOV	28	0723	0745	0725	S16	W18	5167	22	1	3	0725			2.30		G-SWF
ABASTUMANI	28	0758 E	0802 D	0800 U	S16	W15	5167	4 D	□	1			1.80			
MCMATH	28	1348	1406	1351	N24	W37	5164	18	1	1	1351		2.30			
MCMATH	28	1851 E	2151 D		S09	W68	5176	180	1	1	1909		2.35			
SIMEIZ	29	0655	0708	0659	S18	W27	5167	13	1	2	0700		2.20	1.70	92	
MCMATH	29	1425	1632	1519	S14	E85	5179	127	1	1						
MCMATH	29	1607	1650	1625	S17	W40	5167	43	1	1	1625		3.40			
MCMATH	29	1645	1707	1648	S14	E85	5179		1	1						
ABASTUMANI	30	0532	0723	0616	S13	E80	5179	111	1&	3			5.50			
SIMEIZ	30	0610	0635	0616	S11	E81	5179	25	1&	2	0610		7.00	2.00	68	
SIMEIZ	30	0712 E	0726	0717	S11	E81	5179	14 D	1&	2	0717		6.00	1.90	64	
MCMATH	30	1813 E	1947	1850	N03	E90	5180	94	1	1						
MCMATH	30	2013	2056 D	2020	N03	E90	5180	43	1	1						

SOLAR FLARES

MAY 1959

OBSERVATORY	DATE MAY 1959	OBSERVED UNIVERSAL TIME START	OBSERVED UNIVERSAL TIME END	OBSERVED UNIVERSAL TIME MAX. PHASE	LOCATION APPROX. LAT.	LOCATION APPROX. MER. DIST.	LOCATION McMATH PLAGE REGION	DURATION — MINUTES	IMPORTANCE	OBS. COND.	MEASUREMENTS TIME — U T	MEASUREMENTS MEAS. AREA Sq. Deg.	MEASUREMENTS CORR. AREA Sq. Deg.	MEASUREMENTS MAX. WIDTH Ha	MEASUREMENTS MAX. INT. %	PROVISIONAL IONOSPHERIC EFFECT
ONDREJOV	31	1345 E	1356 D		S14	W61	5167	11 U	1	3	1348			2.30		

These flare reports are addenda to the May 1959 flares published in CRPL-F 178B, June 1959.

CAPRI G	ANACAPRI - GERMAN
CAPRI S	ANACAPRI - SWEDISH
GOOD HOPE	ROYAL OBSERVATORY, CAPE OF GOOD HOPE
KIEV*	KIEV UNIVERSITY
KODAIKNAL	KODAIKANAL
KRASNYA	KRASNAYA PAKHRA
LOCKHEED	LOS ANGELES
MOSCOW-G	MOSCOW - GAISH
R O EDIN	ROYAL OBSERVATORY, EDINBURGH
R O HERST	GREENWICH ROYAL OBSERVATORY, HERSTMONCEUX
SAC PEAK	SACRAMENTO PEAK
SCHAUINS	SCHAUINSLAND
USNRL	UNITED STATES NAVAL RESEARCH LABORATORY

SAC PEAK: ALL VALUES IN MAX. INT. COLUMN ARE ARBITRARY UNITS (0-40), NOT PERCENT OF CONTINUOUS SPECTRUM.

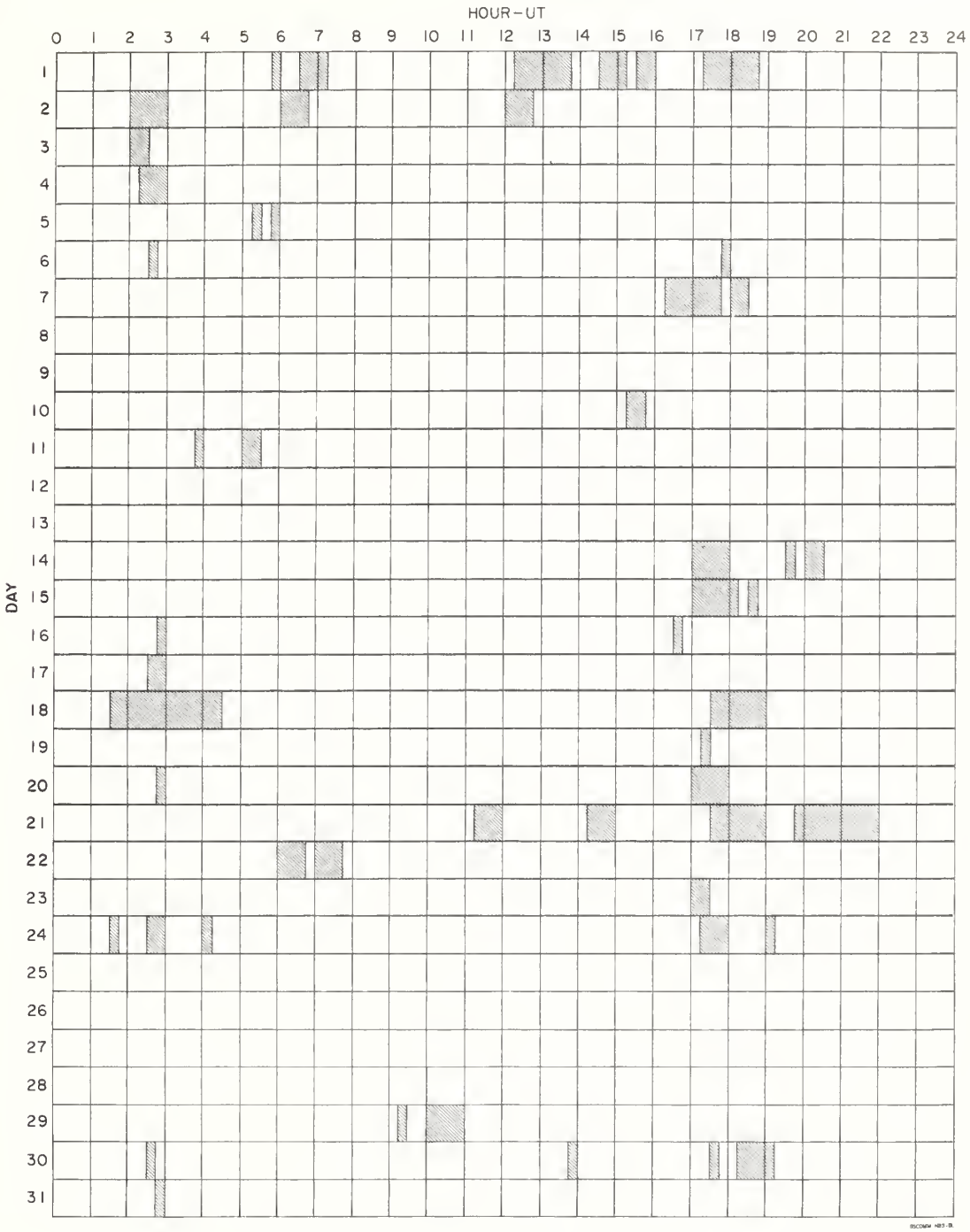
E - LESS THAN & - PLUS

D - GREATER THAN - - MINUS

U - APPROXIMATE ☐ - NOT REPORTED

INTERVALS OF NO FLARE PATROL OBSERVATIONS

MAY 1959



Stations Include:

Abastumani
Alma Ata
Anacapri (Swedish)
Arcetri
Cape Town
Climax
Dunsink
Hawaii
Huancayo
Kharkov
Kiev GAO
Kodaikanal
Krasnaya Pakhra
Locarno
Lockheed
Mitaka
Meudon
Moscow University
Nederhorst
Nizamiah
Ondrejov
Ottawa
Pirculi
Royal Greenwich Observatory
Herstmonceux
Sacramento Peak
Simeiz
Sydney
Tashkent
Uccle
Utrecht
Voroshilov
Zurich

IONOSPHERIC EFFECTS OF SOLAR FLARES

(Sudden Cosmic Noise Absorption / Sudden Enhancements Of Atmospherics / Solar Noise Bursts At 18 Mc.)

FEBRUARY 1959

Feb. 1959	CLASS SCNA	CLASS SEA	CLASS Burst	WIDESPREAD INDEX	TIME (UNIVERSAL TIME) BEGIN	TIME (UNIVERSAL TIME) MAX.	TIME (UNIVERSAL TIME) END	PERCENT ABSORPTION SCNA	OBSERVATION STATIONS
1		1		5	1155	1210	1234		DU, NE, PA, PU
1	1			1	1717	1725	1739	20	RE
2	3			5	1818	1825	1847U	57	BO, HA, MC, RE, SP
2		2		5	1820	1833	1848U		A3, A5, A6, BO, HA, NE, PA
2	3			5	1847	1857	1945	74	BO, HA, RE
2		2		5	1848	1858	2000		A3, A5, A7, BO, HA
2		2+		1	1908	1921	1958		A3
2	1			1	1910	1918	1930	13	HA
3		□		3	1140	1144	1210		DU, ED
6		2+		2	1321	1330	1355		A1, A5
8		2		1	0922		0951		NE
8	1			3	1344	1347	1404	15	MC, RE
8		2		5	1344	1346	1430		A1, A3, DU, ED, MC, NE, PA
8	2+			5	2035	2046	2130	66	BO, HA, MC, RE, SP
8		3		5	2037	2050	2210		A1, A3, A5, A7, BO, HA, SP
9	2+			1	0159	0208	0240		HA
9		1		1	0201		0225		HO
9		3		5	0952	1011	1056		A3, DU, ED, NE
9		2		5	1316	1331	1430		A1, A3, DU, ED, NE
9		2		3	1619	1621	1631		ED, NE
9		2		5	1636	1644	1710		A1, ED, MC, NE, PA
9	3			3	1638	1646	1706	85	MC, RE
10	1			1	0218	0230	0248	27	HA
10		1		3	1214	1221	1316		DU, NE
10		2		5	1435	1441	1521		DU, ED, NE, PA
10	1			5	1824	1826	1845	15	BO, HA, RE
10		1		5	1824	1828	1950		A3, A7, BO, NE
12	1			5	2305	2319	2350	7	BO, HA
12		1		5	2310	2329	0015		BO, HA
15	1			4	1628	1634	1655	15	BO, RE
15		1		5	1629	1643	1730		BO, ED, NE
16		1+		5	0516		0545		HO, TO
16		2		1	0838		0912		PU
16	1			5	2043	2100	2150		BO, HA
16		1		5	2045	2054	2155		BO, HA
17		2		5	1033		1108		NE, PA
17	1			1	1826	1846	1905	14	BO
17		2		5	1840	1852	1915		A1, A2, A5, A7, BO
17	1+			5	2219	2225	2245	40	BO, HA
17		1		5	2224	2233	2324		A7, BO, HA
18		1		1	0506		0537		HO
19	1			5	2036	2047	2110	20	BO, HA
19		1		5	2037	2057	2140		A5, A7, BO, HA
20	1+			1	2018	2027	2055	15	BO
20		1		3	2019	2038	2120		A7, BO
25		1		1	1403		1415		NE
26		2		2	2150	2205	2240		A1, A5
27	1			1	1800	1810			MC
27		2		4	1800	1820	1845		ED, MC
28		1+		5	1857	1907	2000		A1, A5, A7

COMMERCE - STANDARDS - BOULDER

IONOSPHERIC EFFECTS OF SOLAR FLARES

(SHORT-WAVE RADIO FADEOUTS)

JULY 1959

July 1959	Start UT	End UT	Type	Wide Spread Index	Importance	Observation Stations	Known Flare, UT CRPL-F 180
1	1752	1920	S-SWF	5	2+	BE, FM, HU, MC, PR, WS	
8	0821	0931	Slow S-SWF	5	2+	BR, NE, OK	0818
8	1848	1910	S-SWF	5	1	AN, BE, FM, HU, LA, MC, PR, WS	
9	0820	0857	C-SWF	5	1+	BR, OK	0804E
9	1812	1910	S-SWF	5	2	AD, BE, FM, HU, LA, MC, PR	1810
9	1943	2012	S-SWF	5	1+	BE, FM, HU, LA, MC, PR	1933
9	2040	2104	S-SWF	5	1+	BE, FM, HU, LA, MC, PR, WS	2024E
10	0200	0510	Slow S-SWF	5	3+	AD, CA, LA, NE, OK, TO, WS, RCA+, CW++	0210E
10	0605	0840	C-SWF	1	3+	OK	0539E
10	1827	1848	S-SWF	5	1	AN, BE, HU, MC, PR	
12	0420	0543	S-SWF	1	2+	OK	0512E
12	0630	0642	S-SWF	5	1+	JU, NE, OK	0623E
12	2220	0000	C-SWF	5	2-	AN, MC, OK, PR, WS	2152
13	0638	0740	Slow S-SWF	5	2	JU, OK	0626
13	1030	1055	Slow S-SWF	5	2-	BR, PR	1029
13	1940	2039	Slow S-SWF	5	2	AD, BE, FM, HU, LA, MC, PR, RCA+	1930
14	0328	0628	S-SWF	5	3+	AD, AN, KO, LI, NE, OK, TO, CW++	0325E
14	1355	1540	Slow S-SWF	4	2+	FM, MC, PR, WS	1400
14	1735	1750	S-SWF	4	1-	FM, HU, MC, PR	1730
15	1258	1323	S-SWF	5	2+	BR, FM, HU, NE, PR	1251
15	1922	1941	S-SWF	4	1+	LA, PR, WS	1923
16	0705	0750	C-SWF	1	2-	OK	0640E
16	1610	1638	S-SWF	5	2-	AN, FM, HU, LA, MC, PR, WS CW*	1604
16	2118	0015	S-SWF	5	3+	AD, BE, FM, MC, NE, OK, PR, TO, WS, RCA+, CW**	2114
21	0627	0640	S-SWF	4	1-	AN, OK	
21	0650	0730	Slow S-SWF	5	1+	KU, OK	0656E
25	0321	0342	S-SWF	5	1+	AD, AN, OK	0316E
25	1916	2052	S-SWF	5	2+	AN, BE, FM, HU, LA, MC, NE, PR, WS	
25	2202	2237	C-SWF	3	1	FM, MC, WS	
26	0402	0448	C-SWF	5	2	AD, AN, OK	*
26	0830	0900	C-SWF	1	1+	OK	0827
27	1228	1254	S-SWF	5	2+	BE, MC, NE, PA, PR, CW**	1222
27	2105	2128	Slow S-SWF	4	1+	AD, BE, HU, MC, PR, TO **	2050
29	1158	1340	Slow S-SWF	5	2+	BE, DA, FM, JU, KU, MC, NE, PR, PU, WS, CW***	1205
29	2023	2105	Slow S-SWF	5	2-	AD, AN, FM, HU, MC, PR, WS	2020
29	2120	2205	S-SWF	5	2	AD, AN, BE, FM, HU, LA, MC, OK, PR, TO, WS	2117
30	0005	0048	C-SWF	5	2-	AD, CA, OK	0000
30	0337	0358	S-SWF	5	1	AD, CA, OK	0339E

* No known flare patrol

BR = Breisach, G.F.R.
CA = Canberra, Australia
DA = Darmstadt, C.F.R.
JU = Juhlesruh, C.D.R.
KO = Kodaikanal, India
KU = Kuhlungsborn, G.D.R.
LA = Los Angeles, Calif.
LI = Lindau, C.F.R.
NE = Nederhorst den Berg, Netherlands
PA = Paramaribo, Dutch Cuiana
PU = Prague, Czechoslovakia
TO = Hiraiso Radio Wave Observatory, Japan
CW* = Cable and Wireless, Barbadoes
CW** = Cable and Wireless, Somerton, England
CW*** = Cable and Wireless, Brentwood, England
CW+ = Cable and Wireless, Hong Kong
CW++ = Cable and Wireless, Singapore
CW+++ = RCA Communications, Inc., Pt. Reyes, Calif.

SOLAR RADIO EMISSION

OUTSTANDING OCCURRENCES

AUGUST 1959

Ottawa — **2800 Mc.**

Aug. 1959	Type	Start UT	Duration Hr:Min	Maximum Time UT	Maximum Peak Flux	Remarks
1	8 Group (2)	1743	1.13			
	3 Simple 3	1743	30	1755	12	
	2 Simple 2	1817	4	1818.5	29	
	4 Post Increase		35		7	
1	2 Simple 2	2014	2	2014.5	19	
	4 Post Increase		7		5	
2	1 Simple 1	1615.5	1.5	1616.2	5	
2	1 Simple 1	1828.5	1.5	1829	6	
3	1 Simple 1	1304	3	1305	5	
3	8 Group (3)	1500	29			
	2 Simple 2	1500	7	1502.5	15	
	1 Simple 1	1514.3	3	1515	4	
	3 Simple 3	1519	10	1520.5	7	
3	2 Simple 2 f	2050	5	2051	23	
5	2 Simple 2	1627.5	2	1628	12	
6	2 Simple 2	1323	5	1324.7	18	
6	6 Complex	1500	2.5	1501.2	35	
	4 Post Increase A		30		9	
	2 Simple 2	1523.2	1	1523.4	40	
6	2 Simple 2	1752.5	3	1753.3	28	
6	2 Simple 2	1833.7	0.5	1833.9	13	
6	2 Simple 2	2002.5	4	2004	14	
6	2 Simple 2	2201	6	2204	10	
6	3 Simple 3 f	2309	20	2310	17	
7	2 Simple 2	1330	8	1331.5	9	
7	2 Simple 2	1539	2	1539.5	8	
7	2 Simple 2 f	1559.9	3.5	1600.5	68	
	4 Post Increase		40		8	
7	2 Simple 2	1734	3	1734.8	42	
8	2 Simple 2	2149.2	1	2149.7	32	
9	2 Simple 2	1230	7	1232	15	
11	2 Simple 2	1205	2.5	1206	120	
	4 Post Increase		15		6	
12	6 Complex f	1807.5	10	1809	18	
12	2 Simple 2 f	1949.3	1.7	1950.1	13	
13	2 Simple 2	2157.5	1	2158	15	
14	2 Simple 2	1221	1.5	1221.5	30	
15	8 Group (2)	1458.5	7.5			
	2 Simple 2	1458.5	4.5	1459.5	50	
	1 Simple 1	1503	3	1504.3	4	
15	1 Simple 1	1824.5	4	1826	7	
16	3 Simple 3	1550	6 30	indet.	10	
17	2 Simple 2 f	1218.5	7	1221	335	
	4 Post Increase		1 00		6	
17	2 Simple 2 f	2046.5	7	2048	90	
	4 Post Increase		10		4	
18	- Records incomplete A	b1200	>1 30	indet.	*30	*maximum reached during this period
	6 Complex	1301.8	2.2	1302	22	
18	1 Simple 1	1403.5	1.5	1404	6	
18	3 Simple 3 A	1619	3 00	1727	23	
	1 Simple 1	1621	1.3	1621.7	7	
	3 Simple 3	1655	10	1656.7	17	
	2 Simple 2	1717.3	1	1717.5	33	
18	2 Simple 2	2223.5	5	2224.7	18	
19	6 Complex f	1745.5	7	1747.9	55	
20	1 Simple 1	1420.5	1.5	1421	5	
21	2 Simple 2	1632	9	1634.3	65	
	4 Post Increase		1 45		11	
22	6 Complex	1310	8	1311.5	20	
	4 Post Increase		20		8	
22	1 Simple 1	1517	3	1518.5	4	
22	6 Complex	1636	12	1637.7	25	
23	1 Simple 1	1303.5	1	1303.9	7	
23	1 Simple 1	1458	3	1459	7	
24	8 Group (2)	2202.5	>1 18.5			
	2 Simple 2	2202.5	5	2205	14	
	4 Post Increase		15		5	
	2 Simple 2 f	2234	7	indet.	>150	
	4 Post Increase		>40		15	
25	1 Simple 1	1251.5	1	1252	7	
26	6 Complex	1239.5	6	1243.8	67	
27	2 Simple 2	1826.8	1.2	1826.9	60	
28	2 Simple 2	1343	5	1344.2	35	
29	2 Simple 2	1645.5	3	1647	9	
29	8 Group (2)	1727	9			
	2 Simple 2	1727	4	1728	60	
	2 Simple 2	1734.7	1.3	1735	15	
29	8 Group (2)	2231	23.5			
	2 Simple 2	2231	4	2232	15	
	2 Simple 2	2243.5	11	2247	60	
30	3 Simple 3 A	1535	1 30	1550	18	
	2 Simple 2	1539	6	1542.3	32	
30	2 Simple 2	1742.5	5	1743.3	36	
31	1 Simple 1	1551.5	2	1552.5	6	
31	3 Simple 3 A	1847	2 00	indet.	15	
	8 Group (2)	1853	24.5			
	6 Complex f	1853	4.5	1855.8	28	
	2 Simple 2 f	1858.5	19	1906	270	
	2 Simple 2	2026	1	2026.3	18	
31	2 Simple 2	2151.3	2.5	2151.5	60	

SOLAR RADIO EMISSION
OUTSTANDING OCCURRENCES
AUGUST 1959

BOULDER

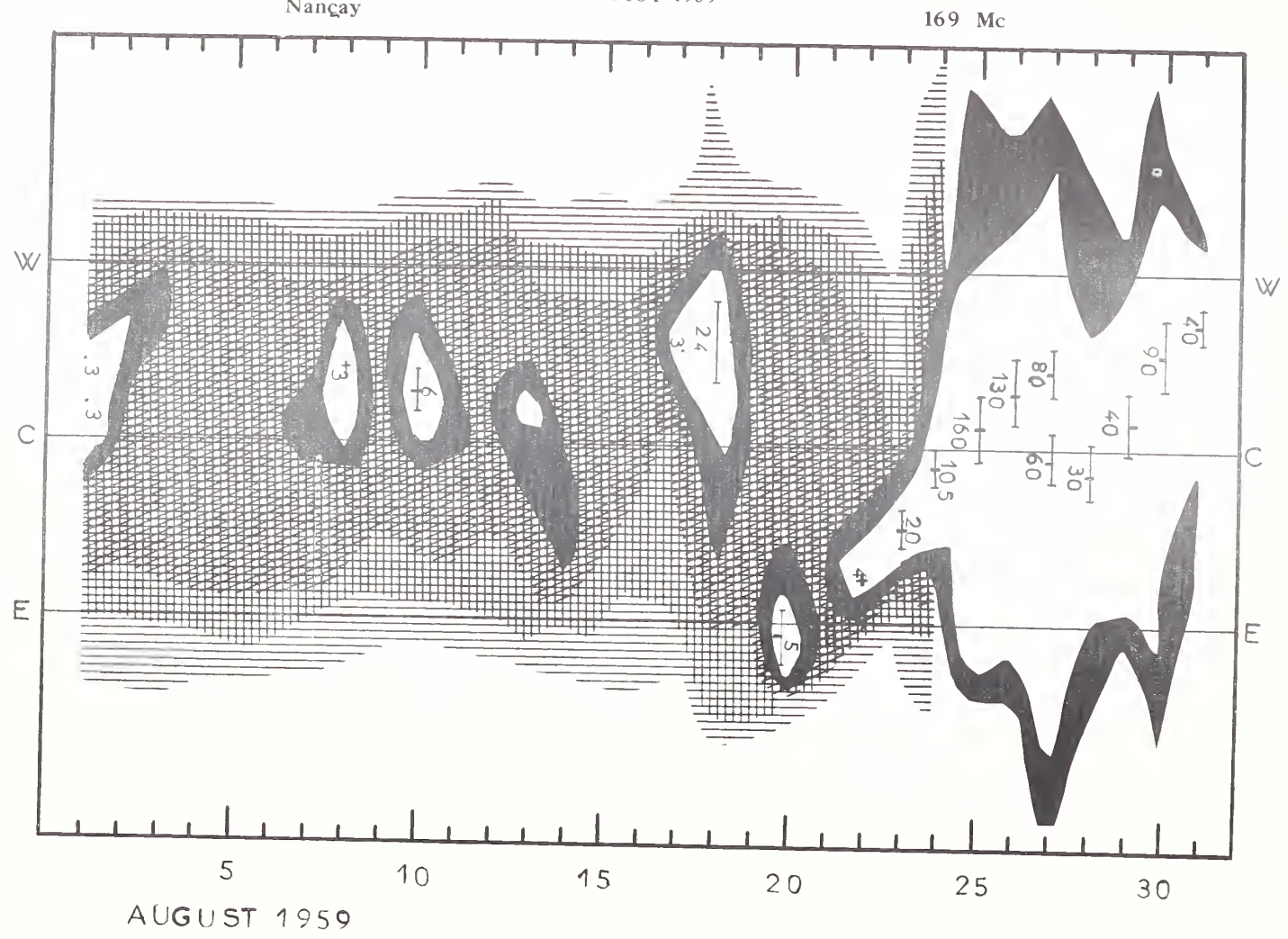
167 MC

Aug. 1959	Type	Start UT	Time of Maximum UT	Duration Minutes	Intensity
1	6	1230 E		805 D	2
2	3	1308.2	1308.2	0.1	2 *
3	3	1210.5	1210.5	0.5	2 *
3	3	1215.8	1215.8	0.2	2 *
3	2	1331.7	1332.8	3.3	2
3	2	1410.0	1411.8	2.0	1
3	2	1415.0	1416.0	1.0	1
3	3	1421.9	1421.9	0.1	1
3	3	1423.5	1423.5	0.1	1
4	3	1546.8	1546.8	0.2	2
4	2	2204.2	2205.9	2.2	2 S
5	3	0037.0	0037.8	1.0	2
5	3	0139.2	0140.0	1.3	2 **
5	3	2040.5	2040.8	0.5	2
6	3	1328.0	1328.0	0.4	2
6	3	1425.2	1425.7	0.8	2
6	3	1517.6	1517.6	0.3	2
6	3	1525.2	1525.2	0.8	3
6	3	1537.9	1537.9	0.3	2
6	3	1602.0	1602.1	1.0	3
6	3	1730.0	1730.8	1.0	3
6	3	1829.0	1829.3	1.0	3
6	3	1831.0	1831.0	0.6	2
6	3	1832.2	1832.4	0.6	2
6	3	2137.0	2137.9	1.8	3
6	2	2140.0	2141.7	3.4	2
6	3	2147.5	2148.0	1.0	2
6	8	2337.0	2338.3	5.0	3
7	2	1333.9	1334.1	1.6	2
7	3	1458.0	1458.2	0.6	2
7	3	1504.0	1504.0	0.2	2
7	3	1529.2	1529.4	0.8	2
7	2	1531.5	1533.5	2.9	2
7	3	1618.0	1618.0	0.3	2
7	3	1708.5	1708.5	0.2	2
7	9 A	1733.0	1734.0	6.0	3
7	9 B	1739.0	1739.2	3.0	3
7	3	1906.7	1907.0	0.8	2
7	2	2108.9	2109.0	1.1	2
7	3	2202.4	2202.4	0.2	2
8	3	0028.2	0028.2	0.2	2
8	3	0140.2	0141.0	0.8	2 **
8	3	1424.8	1425.2	1.2	2
8	3	1558.8	1559.2	1.2	1
8	2	1617.0	1617.8	1.6	1
8	2	1717.0	1719.2	2.5	2
8	7	1730.		382.	2
8	3	2149.0	2150.0	1.8	3
9	3	0124.3	0126.2	3.4	2 **
9	3	1736.0	1736.0	0.5	1
10	3	0121.2	0121.2	0.2	2 S**
10	2	1810.2	1810.6	1.8	2
10	3	1856.2	1856.2	0.2	2
10	3	1859.3	1859.3	0.2	1
10	2	2158.2	2159.0	1.2	1
10	3	2307.5	2307.5	0.2	2
11	3	0016.0	0016.3	1.0	2
11	3	1212.0	1212.5	1.5	2 *
12	2	1258.1	1259.1	1.1	2 *
12	2	1359.0	1400.0	1.5	2
12	3	1440.0	1440.0	0.2	2
12	2	1450.8	1451.5	2.2	2
12	3	1453.8	1453.8	0.2	2
12	3	1809.5	1809.5	0.2	2
13	2	1404.0	1405.0	4.0	2
13	3	1419.0	1419.0	0.2	2
13	3	1449.3	1449.8	0.7	2
13	2	1455.0	1504.8	11.0	3
13	3	1855.6	1855.9	1.1	2 S
13	8	2355.0	2355.0	2.0	3

Aug. 1959	Type	Start UT	Time of Maximum UT	Duration Minutes	Intensity
14	8	1219.8	1221.5	2.5	3 *
14	3	1511.5	1511.6	1.0	2
14	2	1611.3	1611.4	1.3	2
14	3	1648.3	1648.3	0.5	2
14	2	1649.8	1650.0	0.9	2
15	3	1459.0	1459.4	1.0	3
15	8	1503.0	1503.3	3.0	3
15	3	1847.5	1848.1	1.5	2
15	3	2048.5	2048.5	0.2	2 S
16	2	1246.8	1247.8	1.5	3 *
16	3	1651.0	1651.0	0.2	2
16	3	1804.5	1805.0	0.5	1
16	3	1825.2	1825.2	0.2	1
17	9 A	1219.0	1220.8	5.4	3 *
17	9 B	1224.4	1226.3	4.6	3 *
17	3	1608.0	1608.0	0.2	2
17	3	1745.8	1745.8	0.2	2
17	2	1818.0	1818.1	1.0	2
17	3	1858.7	1858.7	0.2	2
17	3	2000.0	2000.5	2.0	2
17	9 A	2047.6	2048.2	4.2	3
17	9 B	2051.8	2055.0	53.2	2
17	3	2156.8	2156.8	0.2	2
18	2	0131.5	0133.0	4.3	2 **
18	3	1644.0	1644.0	0.2	2
18	3	1808.4	1808.4	0.2	1
18	3	1855.0	1855.0	0.2	2
18	3	1935.0	1935.0	0.2	1
18	3	2018.0	2018.0	0.2	2
18	8	2138.0	2139.0	8.5	2
18	8	2222.8	2224.0	3.2	2
19	3	1237.0	1237.0	0.2	2 *
19	3	1306.3	1306.3	0.2	2 *
19	2	1309.8	1310.4	1.0	1 *
19	2	1318.8	1318.8	5.0	2 *
19	8	1755.5	1756.5	3.1	3
19	8	1848.0	1850.0	3.0	3
20	3	1838.8	1838.8	0.2	1
20	2	1840.8	1841.0	1.0	2
20	3	1846.0	1846.0	0.2	2
20	3	1910.5	1910.5	0.2	3
20	2	1929.0	1929.0	1.0	2
20	2	1932.4	1933.5	2.6	3
20	3	1936.7	1936.7	0.2	2
20	3	2016.3	2017.0	0.7	2
21	3	0116.9	0116.9	0.2	2 *
21	3	0121.6	0121.6	0.2	2 *
21	2	0126.1	0126.6	0.9	2 *
21	2	0129.0	0129.5	1.5	2 *
21	2	1447.0	1448.6	4.0	2
21	3	1602.2	1602.2	0.2	2
21	3	1834.9	1835.5	0.9	2 S
21	2	1850.0	1851.0	1.8	2 S
21	3	1856.8	1856.8	0.2	2 S
21	2	2006.0	2006.5	0.8	1 S
23	6	1221 E		787 D	2
24	6	1221 E		788 D	2
25	6	1217 E		789 D	2
26	6	1219 E		788 D	2
27	6	1219 E		788 D	2
28	6	1320 E		722 D	2
29	6	1226 E		141 D	3
29	6	1530 E		591 D	3 I
30	6	1227 E		772 D	3
31	6	1227 E		771 D	2
31	8	1853.0	1917.5	39.0	2

* On sunrise pattern.
** On sunset pattern.

SOLAR RADIO EMISSION
INTERFEROMETRIC OBSERVATIONS
AUGUST 1959

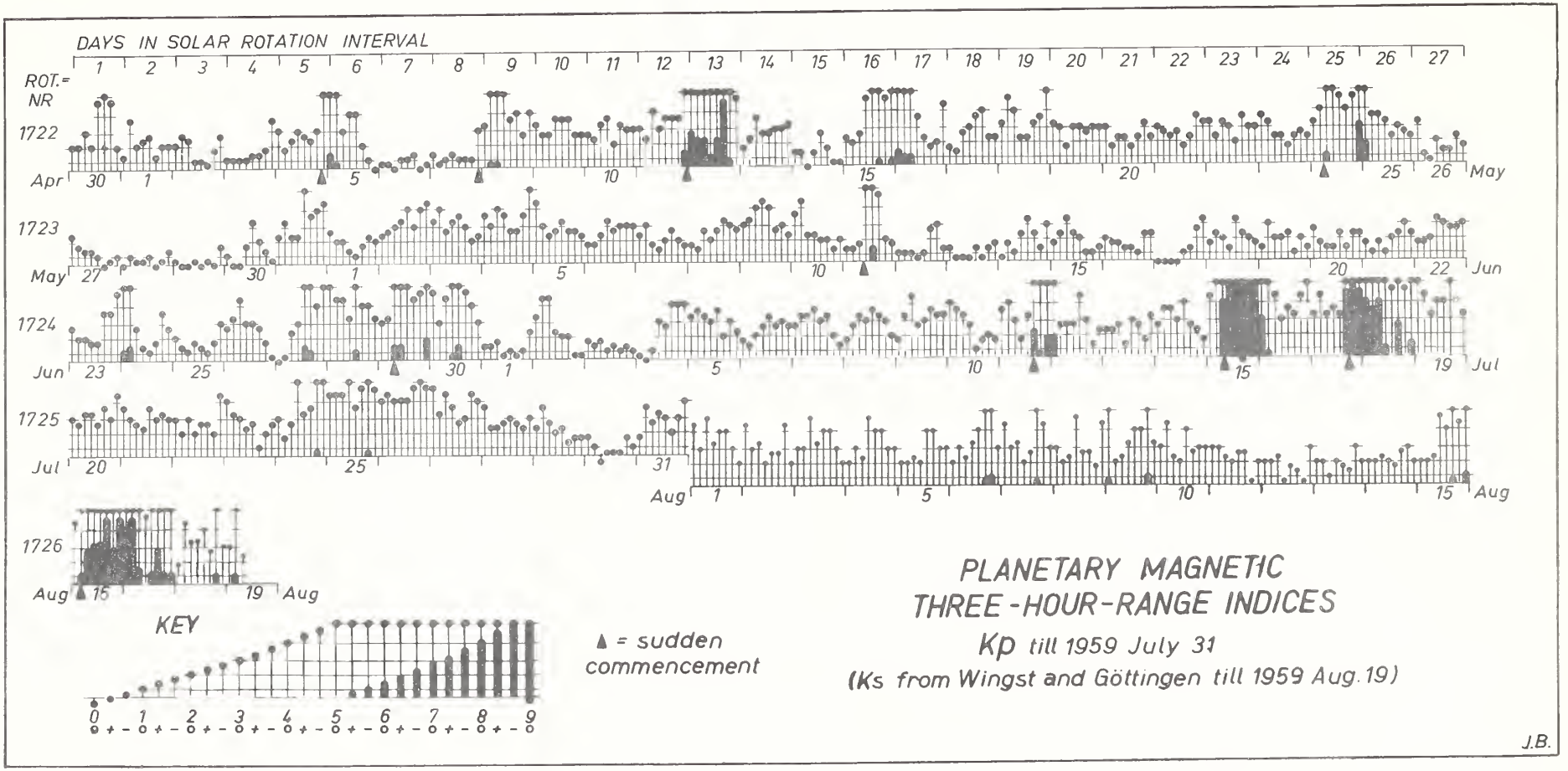


GEOMAGNETIC ACTIVITY INDICES

JULY 1959

July 1959	C	Values Kp Three hour Gr. interval 1 2 3 4	5 6 7 8	Sum	Ap	Final Selected Days
1	0.2	1+ 1+ 2- 1-	1o 1- 1o 2+	10o	5	Five
2	0.8	3+ 4+ 4+ 2+	2o 2o 1- 1-	20-	14	Quiet
3	0.1	2- 1+ 2- 1o	1+ 1o 1+ 1o	10+	5	
4	0.8	1- 0+ 1o 3o	3- 4o 4o 4o	20-	15	1
5	0.9	3+ 4- 3+ 3o	4- 2o 3o 2+	24+	16	3
						13
6	0.6	2- 1+ 2o 3-	3+ 3- 3o 3-	19+	11	29
7	0.8	3- 3+ 3+ 4-	3o 3+ 2o 1+	23-	14	30
8	0.8	2- 3- 3+ 3o	4- 3+ 3o 2o	23-	14	
9	0.9	2- 3+ 4+ 3-	3o 4- 3+ 3+	25+	18	
10	0.8	4o 4- 3+ 3-	1o 2- 2o 2-	20o	13	
11	1.4	4- 4o 3o 2-	3+ 7- 5+ 6+	34o	44	Five
12	1.1	6+ 3- 3- 3-	4+ 3o 1+ 2+	25+	24	Disturbed
13	0.6	2+ 2+ 3- 1+	3o 3- 2- 3+	19+	11	
14	0.9	3- 4- 4- 3o	4o 3- 2+ 2-	24-	16	15
15	2.0	4+ 5o 8o 9-	9- 9o 9- 9-	61o	236	16
						17
16	1.4	7+ 5+ 4+ 3o	4- 3+ 4+ 5o	36+	47	18
17	1.9	3+ 4+ 3+ 4-	3+ 8+ 9- 8+	43+	110	25
18	2.0	8o 8- 8o 6-	5- 7o 5- 6o	52-	119	
19	1.2	5o 4+ 3+ 4o	4o 5o 4o 3+	33o	31	
20	1.0	3o 3- 3+ 3+	3- 4- 3o 4+	26o	18	
21	0.9	4- 3o 3- 2+	4- 3o 3+ 3o	25-	16	Ten
22	0.8	3o 2o 3o 2o	3- 3- 2o 4+	22-	13	Quiet
23	0.7	4o 3+ 3o 2+	3- 1o 2o 3-	21o	13	
24	1.2	3o 2- 3- 5o	3+ 4- 5+ 5o	30-	28	1
25	1.2	4+ 4+ 4+ 5o	4- 5- 5+ 5-	36+	38	2
						3
26	1.1	4o 4+ 4o 4o	4o 5- 5o 5-	35-	33	4
27	1.1	5- 3+ 4+ 4-	3- 3o 4+ 4o	30o	25	6
28	0.7	4- 2+ 2+ 3-	3o 3- 2+ 3o	22o	13	10
29	0.5	2+ 4- 3- 2o	2+ 1+ 2- 2-	18-	10	13
30	0.1	2- 1o 0o 1-	1- 1- 2- 1o	7+	4	23
31	0.9	2- 4- 3- 3+	3o 2o 3o 4o	23+	15	29
						30
Mean:	0.95			Mean:	32	

COMMERCE - STANDARDS - BOULDER



CRPL RADIO PROPAGATION QUALITY FIGURES AND FORECASTS

NORTH ATLANTIC

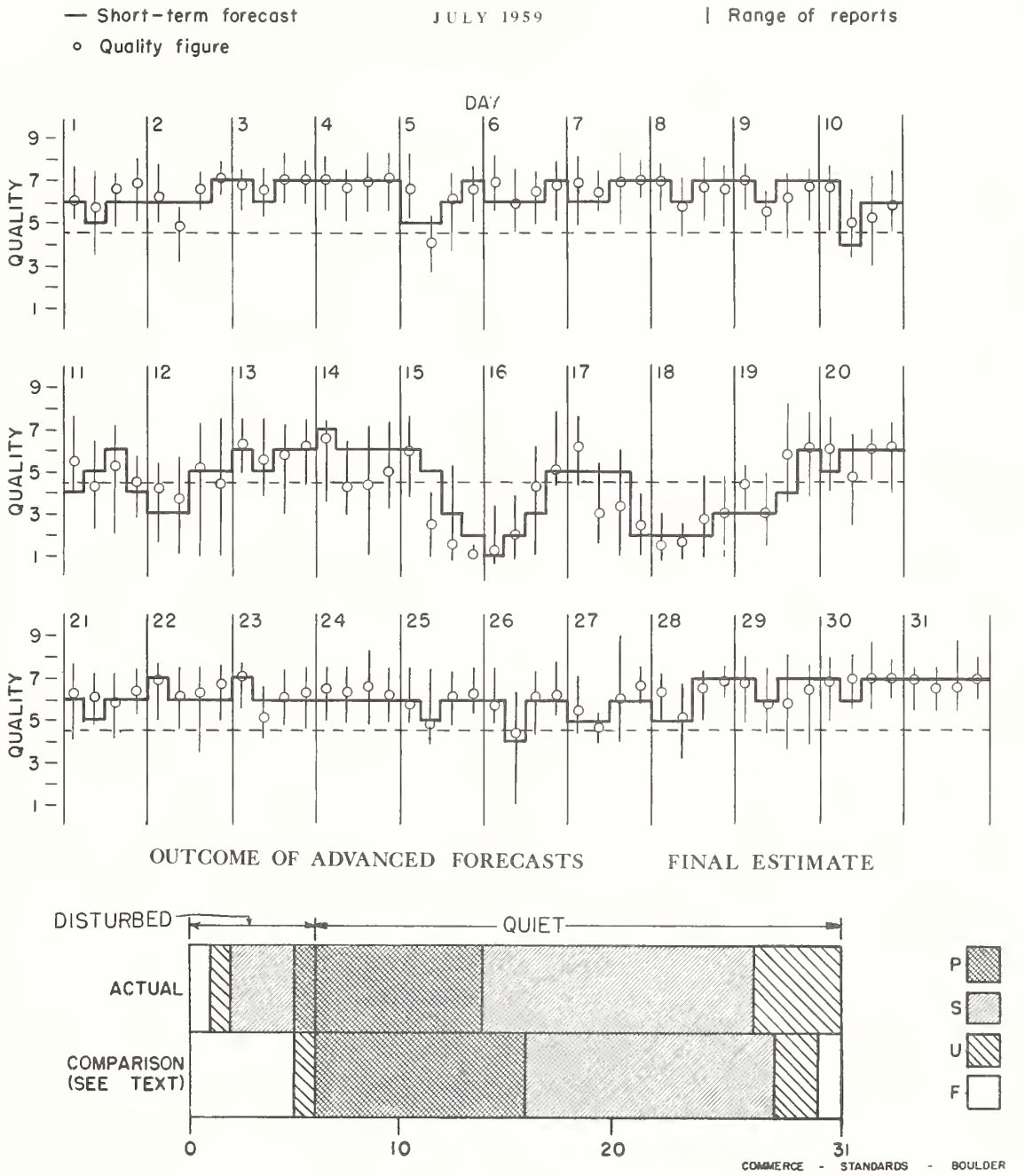
JULY 1959

July 1959	North Atlantic 6-hourly quality figures				Short-term forecasts issued about one hour in advance of:				Whole day index	Advance forecasts (J-reports) for whole day; issued in advance by:				Geomagnetic K_{Fr}	
	00 to 06	06 to 12	12 to 18	18 to 24	00	06	12	18		1-7 days Final	1-7 days Js	1-7 days SDW	1-7 days J	Half (1)	Day (2)
1	6o	6-	7-	7-	6	5	6	6	6+	7			7	2	1
2	6+	5-	7-	7o	6	6	6	7	6o	6			6	3	1
3	7-	7-	7o	7o	7	6	7	7	7-	6			6	1	2
4	7o	7-	7-	7o	7	7	7	7	7-	7			7	1	(4)
5	7-	4o	6o	7-	5	5	6	6	5+	7			7	3	3
6	7o	6o	6+	7-	6	6	6	7	7-	7			7	2	3
7	7-	6+	7-	7o	6	6	7	7	7-	7			7	(4)	2
8	7o	6-	7-	7-	7	6	7	7	6+	7			7	3	3
9	7o	6-	6+	7-	7	6	7	7	6+	6			6	3	3
10	7-	5o	5o	6-	7	4	6	6	6-	6			6	3	2
11	5+	4+	5+	4+	4	5	6	4	5-	3		3	7	3	(5)
12	4o	4-	5o	5+	3	3	5	5	(4+)	3		3	7	3	3
13	6+	6-	6-	6+	6	5	6	6	6o	5		5	7	3	3
14	7-	4+	4+	6-	7	6	6	6	5o	7			7	3	3
15	6o	2+	1+	1o	6	5	3	2	(2+)	7			7	(5)	(9)
16	1+	2o	4+	6-	1	2	3	5	(3o)	3			3	(4)	3
17	6o	3o	3+	2+	5	5	5	2	(3+)	4			4	3	(7)
18	1+	2-	3-	3o	2	2	2	3	(2+)	4		4	6	(7)	(5)
19	4+	3o	6-	6o	3	3	4	6	(4+)	3		3	6	(4)	(4)
20	6+	5-	6o	6+	5	6	6	6	6-	5		5	6	3	3
21	6+	6o	6-	6+	6	5	6	6	6o	6	6		7	3	3
22	7-	6+	6+	7-	7	6	6	6	6+	7	7		7	3	3
23	7o	5o	6+	6+	7	6	6	6	6o	6			6	3	2
24	7-	6-	7-	6+	6	6	6	6	6+	7			7	3	(4)
25	6-	5-	6+	6+	6	5	6	6	6-	7			7	(4)	(4)
26	6-	4+	6+	6+	6	4	6	6	5+	7			7	(4)	(4)
27	6-	5-	6o	7-	5	5	6	6	6-	7			7	(4)	(4)
28	6+	5+	7-	7-	5	5	7	7	6+	7			7	3	3
29	7-	6-	6o	7-	7	6	7	7	6+	7			7	3	2
30	7-	7o	7o	7o	7	6	7	7	7o	6			6	1	1
31	7o	7-	7-	7-	7	7	7	7	7-	6			6	3	3

Score:								
Quiet Periods	P	18	12	18	22	8		8
	S	8	9	7	5	13		13
	U	1	0	0	0	4		4
	F	0	0	1	0	0		0
Disturbed Periods	P	1	4	0	3	1		1
	S	3	3	2	1	3		1
	U	0	2	2	0	1		0
	F	0	1	1	0	1		4

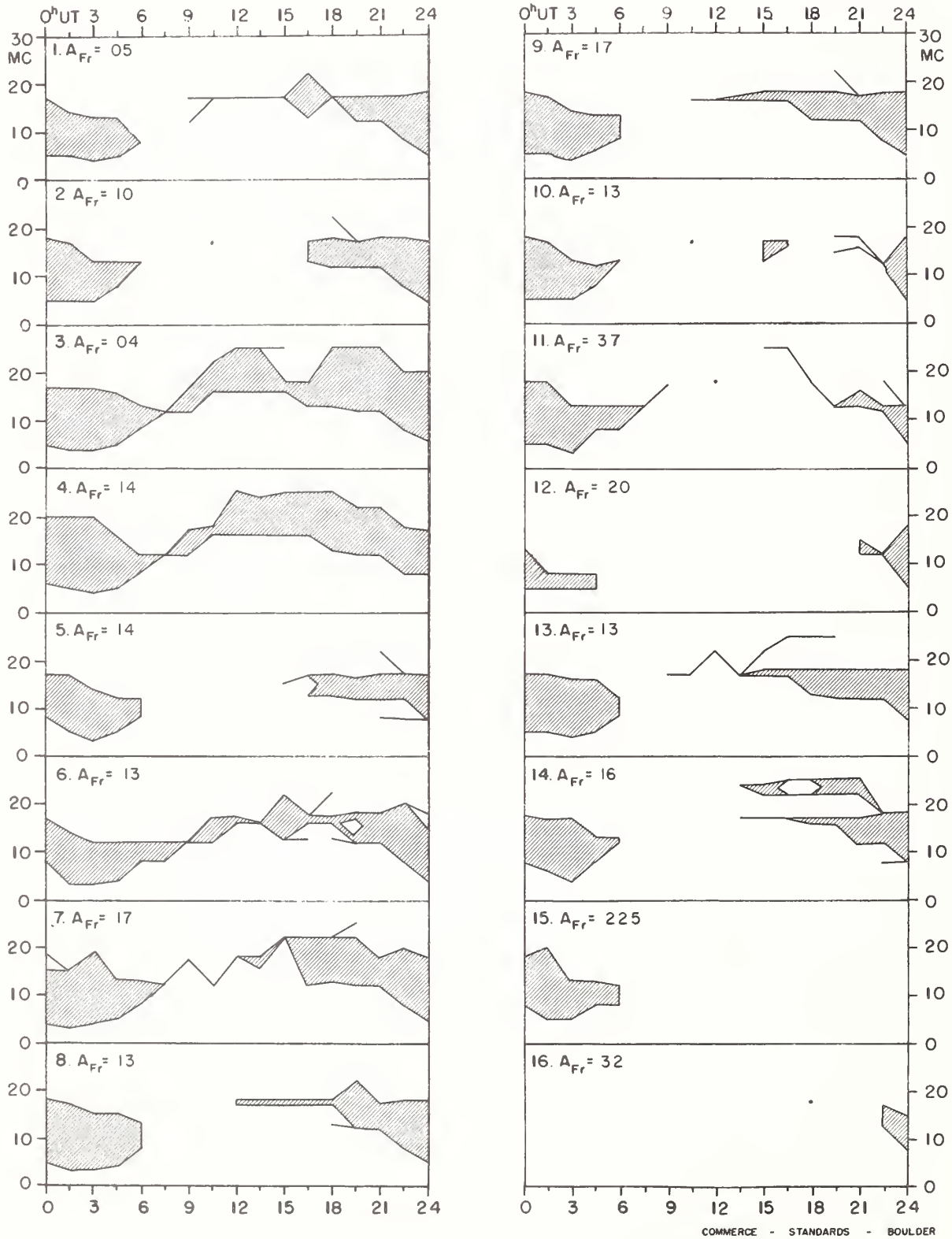
( ) represent disturbed values.

NORTH ATLANTIC

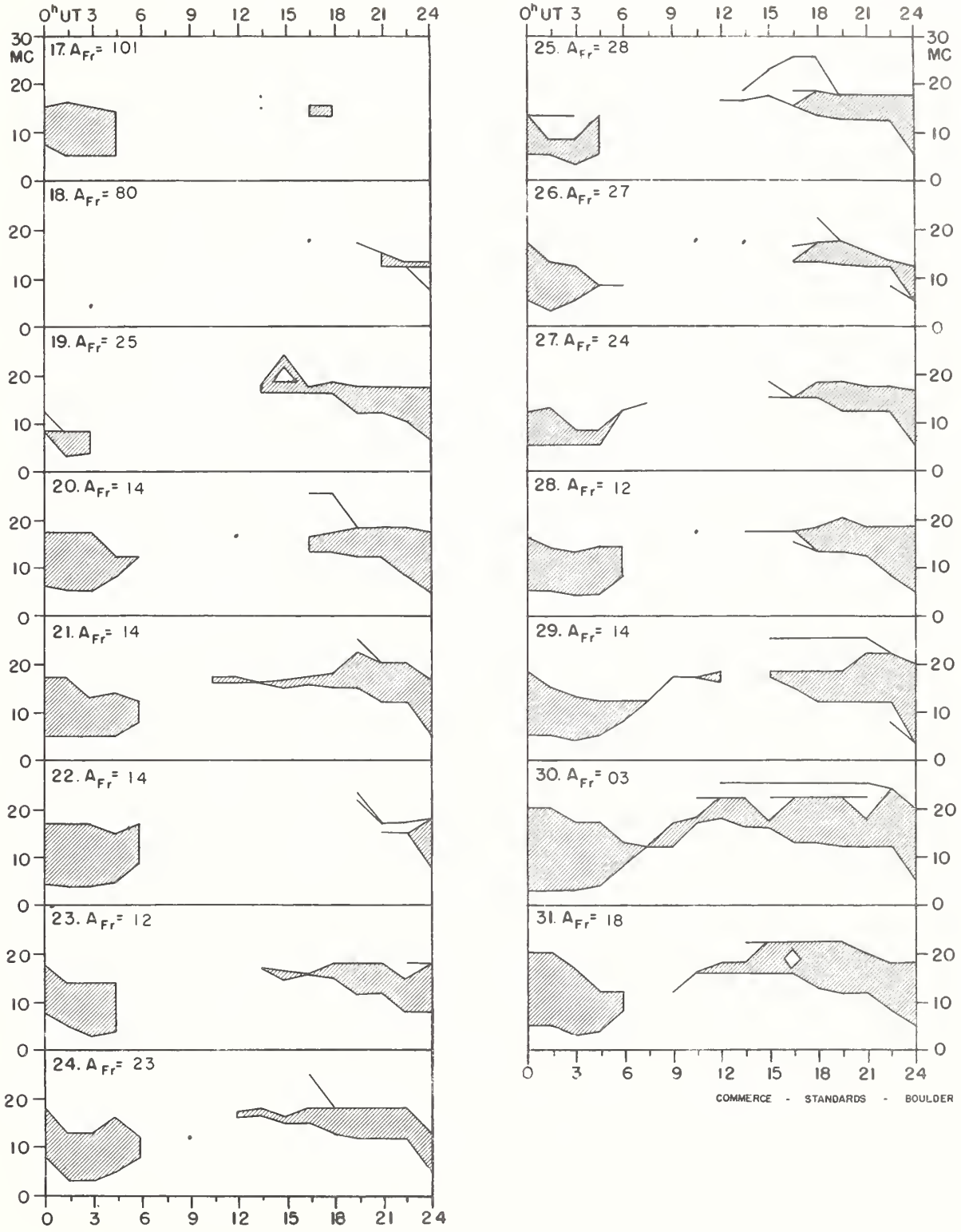


USEFUL FREQUENCY RANGES -- NORTH ATLANTIC PATH

JULY 1959



JULY 1959



Adapted from Observations by Deutsches Bundespost

CRPL RADIO PROPAGATION QUALITY FIGURES AND FORECASTS

NORTH PACIFIC

JULY 1959

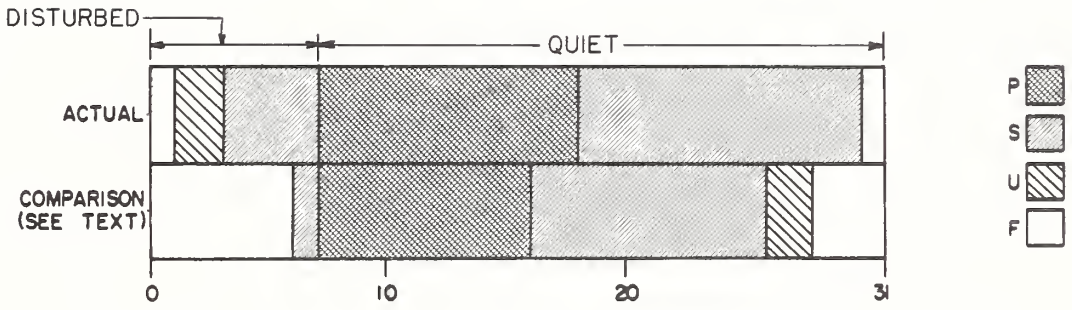
July 1959	North Pacific 12-hourly quality figures		Short-term forecasts issued at		Whole day index	Advance forecasts (Jp reports) for whole day; issued in advance by:				Geomagnetic K_{Si}	
	0700 to 1900	1900 to 0700	0600	1800		1-7 days Final	1-7 days Jps	1-7 days SDW	1-7 days Jp	Half Day (1)	Day (2)
1	6	5	5	5	5	6			6	2	2
2	5	5	4	6	5	5			5	(5)	2
3	5	5	6	6	5	6			6	2	1
4	5	6	6	6	5	6			6	2	3
5	5	6	4	6	6	6			6	(4)	3
6	6	5	5	6	6	6			6	3	3
7	6	6	6	6	6	6			6	(4)	2
8	6	6	6	6	6	6			6	3	2
9	6	5	6	5	6	5			5	(4)	(4)
10	5	5	5	5	5	5			5	3	2
11	5	2	4	3	(4)	3		3	6	3	(5)
12	4	6	2	5	(4)	2		2	6	3	3
13	6	6	6	6	6	4		4	6	3	3
14	5	3	5	5	5	6			6	(4)	3
15	1	2	4	2	(1)	6			6	(7)	(9)
16	4	2	3	5	(3)	2			2	(5)	(4)
17	3	1	3	2	(2)	3			3	(4)	(7)
18	2	3	2	3	(1)	3		3	4	(8)	(4)
19	4	5	3	4	(4)	3		3	5	(4)	(4)
20	5	6	5	5	5	5		5	6	(4)	3
21	6	6	5	6	6	5	5		6	3	3
22	6	6	6	6	6	5	5		6	2	3
23	6	6	5	6	6	5			5	(4)	2
24	6	6	6	6	6	5			5	3	(4)
25	6	6	5	6	6	5			5	(5)	3
26	6	6	5	5	6	6			6	(5)	3
27	7	6	5	6	6	6			6	(5)	3
28	6	6	6	6	6	6			6	3	2
29	6	7	6	6	6	6			6	3	2
30	6	6	6	6	7	6			6	1	1
31	7	6	6	6	7	6			6	(4)	3

Score:					
Quiet Periods	P	12	17		11
	S	12	8		12
	U	1	0		0
	F	0	0		1
Disturbed Periods	P	2	2		0
	S	2	2		4
	U	1	1		2
	F	1	1		1

( ) represent disturbed values.

NORTH PACIFIC
JULY 1959

OUTCOME OF ADVANCED FORECASTS FINAL ESTIMATE



ALERT PERIODS AND SPECIAL WORLD INTERVALS

INTERNATIONAL GEOPHYSICAL COOPERATION 1959
AUGUST 1959

Issued Day/Time UT Aug. 1959	Advance Geophysical Alert	No.	Worldwide Geophysical Alert	Special World Interval
16/0930	Ft. Belvoir Magnetic Storm 15/1400Z			
16/1600		22	Magnetic Storm 15/1400Z	
20/0700	Ft. Belvoir Magnetic Storm 20/0410Z			
20/1600		23	Magnetic Storm 20/0410Z	
24/1300	Hawaii Solar Flare 24/0126Z			
25/1330	Burbank Solar Flare 24/2233Z			

COMMERCE - STANDARDS - BOULDER